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GUIDELINES FOR
Architect/Engineer Construction Surveillance & Inspection (TITLE II) Services

NAVFAC P-1015
MAY 1986

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GUIDELINES FOR ARCHITECT - ENGINEER (A-E) CONSTRUCTION SURVEILLANCE AND INSPECTION (TITLE II) SERVICES

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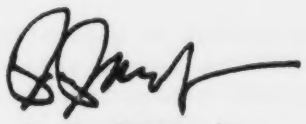
FOREWORD

This manual provides guidance on the concepts, policies, and procedures used by the Naval Facilities Engineering Command (NAVFAC) in preparing, administering, and managing contracts for inspection/surveillance services on NAVFAC construction contracts (commonly referred to as "Title II services").

It is essential that all NAVFAC personnel involved in the preparation and execution of an inspection services contract have a thorough understanding of the requirements prescribed by the Federal Acquisition Regulation (FAR) and other pertinent Department of Defense and Navy directives concerned with the use and administration of contracts for surveillance and inspection services.

This publication is certified as an official publication of the Command and, in accordance with SECNAVINST 5600, has been reviewed and approved.



J. P. JONES, JR.
Rear Admiral, CEC, U. S. Navy
Commander

HOW TO USE THIS MANUAL

This manual has been prepared to assist those involved in preparing and administering A-E contracts for inspection services. The following is a brief description of the contents and intended use of each chapter:

Chapter 1 contains general background information, NAVFAC policy, and guidance in determining when to contract for inspection services. It also includes a section on personal services regarding the preparation and administration of inspection contracts.

Chapter 2 describes the types of services normally available through a inspection services contract, how to draft the scope of work for the contract, and procedures to be followed in the solicitation for and selection of an A-E firm to perform the services. Reference is also made to the guide scope of work for services contained in Appendix A of this manual.

Chapter 3 provides the user with general guidance regarding the pricing and negotiating contracts for inspection services.

Chapter 4 lists general procedures to be followed in the administration of inspection contracts.

Recommendations or suggestions for modification or additional information and instructions that will improve this manual and facilitate its use, are invited and should be submitted through appropriate channels to the Commander, Naval Facilities Engineering Command, (Attention: Code 022), Washington, D.C. 22332.

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CHAPTER 1. BACKGROUND AND POLICY

Section 1. BRIEF HISTORY OF CONTRACTING FOR INSPECTION

1-101. BACKGROUND. Traditionally, Architect-Engineer (A-E) firms have provided planning, design, inspection and other construction related services for owners and clients, both private and public. In the private sector, construction inspection is a service typically provided by Architect-Engineer firms. Until recently, the Navy had performed its inspection of construction contracts almost entirely through the use of Government employees, but rapid workload increases without a corresponding increase in Government inspection resources has required NAVFAC to contract for some of its inspection services.

1-102. ORIGIN OF TERM. Over a period of time, the term "Title II" has been generally accepted as meaning construction inspection provided by an A-E firm through an Architect-Engineer Contract. While this term is used by all three military services, it seems to have originated with the U. S. Army Quartermaster General around 1941 where it appeared in the now obsolete Quartermaster General Construction Manual. In fact, the Defense Acquisition Regulation identified the types of A-E Services as (I) Planning and Design, (II) Supervision and Inspection of Construction; and (III) any other Architect-Engineer Services related to Construction. However, the Federal Acquisition Regulations (FAR) make no such distinction.

1-103. PROCUREMENT OF SERVICES. While there are a number of different ways to obtain services, the generally accepted practice has been to select architectural and engineering firms on the basis of technical qualifications and then to negotiate a fee for the desired services. Historically, construction inspection, surveying and laboratory testing services have been obtained by the private sector, Army Corps of Engineers and NAVFAC in this manner. Educational requirements, professional practice, standards development and tradition all indicate that these services are services that registered or licensed architects and engineers and those in their employ logically and justifiably perform. Accordingly, these are considered professional services of an architectural or engineering nature appropriate for procurement in accordance with the Brooks Act (P.L. 92-582).

1-103.1 The Brooks Act. The Brooks Act is legislation passed in 1972 which states:

> "The Congress hereby declares it to be the policy of the Federal Government to publicly announce all requirements for architectural and engineering services, and to negotiate contracts for architectural and engineering services on the basis of demonstrated competence and qualification for the type of professional services required and at fair and reasonable prices."

The Act also reflected the then existing DoD practice that price is to be negotiated only after a contractor (A-E) is selected based on technical competition. The Brooks Act defines "architectural and engineering services"

to include "those professional services of an architectural or engineering nature as well as those incidental services that members of these professions and those in their employ may logically or justifiably perform."

FAR 36.6, sets forth similar procedures to be used by federal agencies in the procurement of "Architectural and Engineering Services". The Military Construction Codification Act of 1982 (10 USC Section 2855) requires that contracts for Architectural and Engineering services and construction design in connection with military construction or military family housing projects shall be awarded using Brooks Act procedures.

In September of 1982, the General Accounting Office made the determination that Brooks Act procedures applied to the procurement of professional Architectural and Engineering services whether or not the services are related to construction. This was further clarified by the Office of Federal Procurement Policy when it issued its Policy Letter 83-3 which stated that Brooks Act (P.L. 92-582) procedures shall be used by Federal contracting officers whenever it is necessary to procure:

"a. Professional services of an architectural or engineering nature; i.e., those services that are required either by virtue of law or the contracting officer's determination to be performed by a registered or licensed architect or engineer; or

b. Incidental services that members of the A-E professions or those in their employ logically or justifiably perform: i.e., services to be performed in conjunction with professional A-E services procured through the Pub. L. 92-582 procedure. Such services should be contracted for in the course of the procurement of the professional A-E services."

Section 2. NAVFAC POLICY AND GUIDELINES FOR USE

1-201. NAVFAC POLICY. Commanders/Commanding Officers of Engineering Field Divisions (EFD's) and Echelon IV Officers in Charge of Construction (OICC's) are responsible for providing adequate post contract award surveillance and inspection to assure that the requirements of construction contracts are being met. It is the policy of the Naval Facilities Engineering Command (NAVFAC) that this inspection and surveillance be performed by government personnel insofar as practicable.

1-202. DEFINITIONS

1-202.1 **Contractor Inspection System (CIS).** The system required by FAR and included in the general provisions of the construction contract under which the contractor is required to maintain an adequate inspection system and perform such inspections that will assure that the work conforms to the contract requirements.

1-202.2 **Construction Contractor Quality Control (CQC).** The quality control and inspection system established and maintained by the construction contractor on Naval Facilities Engineering Command construction contracts generally over $2 million. Under this procedure the construction contractor establishes a quality control organization to review and approve submittals, perform tests and inspections, and assure compliance with the contract plans and specifications. This system is explained in NAVFAC publication P-445, Construction Quality Management Manual.

1-202.3 **Inspection.** The method by which the Navy assures itself that the construction contractor's work is in compliance with plans and specifications. The Navy is responsible for inspecting construction prior to acceptance and payment. Navy inspection is a part of every construction contract, whether or not Contractor Quality Control (CQC) is applicable to the construction contract. Under an A-E inspection services contract, an A-E firm provides inspection services and makes recommendations upon which the Contracting Officer bases his acceptance of the work.

1-202.4 **Inspection Contractor.** The Architect-Engineer firm which provides the inspection services. The term "inspection contractor" has been used throughout this manual to clearly distinguish the A-E firm that is performing inspection services from the design A-E (even though they may be the same firm).

1-202.5 **Inspection/Surveillance.** The method by which the Navy assures itself that the Contractor Inspection System (CIS) or Contractor Quality Control (CQC) system is functioning properly. Throughout this manual the term "inspection" shall apply to both the inspection and the inspection/surveillance responsibilities of the inspection contractor.

1-203. CRITERIA FOR USE. When, in the review of projected workload against manpower availability, it becomes apparent that there is insufficient manpower to perform the necessary inspection/surveillance functions, and we cannot obtain these services from another Government agency, contracting with an A-E firm for these services should be considered. There are a number of specific instances when contracting is attractive:

1-203.1 Remote Location. If a single project or relatively few projects exist at a significant distance from our basic workload, we may determine that it is in the best interest of the Government to contract with an A-E firm to provide the necessary inspection/surveillance of the ongoing construction work.

1-203.2 Complexity. If a project is technically complex and inspection requires specific technical knowledge beyond our available capabilities or would severely tax our resources in a specialty area we may want to use the professional expertise of an A-E firm.

1-203.3 Peak/Limited Workload. When our workload will exceed available resources for a fairly predictable short period of time, it may be prudent to obtain the necessary surveillance and inspection services for this effort by contract.

1-203.4 Impact. Care must be exercised in the selection of effort to be contracted to assure optimum economy and adherence to prescribed regulations. Contracting efforts shall not result in adverse personnel action against existing full time NAVFAC employees. In addition, the overall workload must be of such a nature that government employee and contractor employee efforts are not redundant.

1-204. PERIOD OF AWARD. Quite frequently A-E contracts are used for inspection of projects with construction durations in excess of one year. On some occasions we are limited by funding constraints from awarding an inspection contract for the entire construction period. It is NAVFAC's policy to limit the period of award on inspection contracts to the following:

1-204.1 SIOH Funded Contracts. Inspection service contracts awarded using SIOH funds shall be limited to initial period of award of one year or full term whichever is longer if full term is 15 months or less. Inspection contracts with a total duration greater than 15 months shall be awarded in one year periods with an option to renew on an annual basis for a total period not to exceed five years.

1-204.2 Contracts Using Funds Other than SIOH. Inspection service contracts awarded using other than SIOH funds shall be limited to an initial period of award of one year with options to renew on an annual basis for a total period not to exceed five years. In addition, there may be other funding limitations on such inspection contracts, such as a requirement to split fund those services crossing fiscal years. Actual constraints associated with the funds being used shall be determined prior to award.

1-204.3 **NAVFAC Approval Required for Exceptions.** In certain instances, with the approval of NAVFACENGCOM (Code 05), a SIOH funded inspection contract for a single project with a construction duration in excess of 15 months may be awarded for the full term of construction. An example would be a project with a construction duration close to, but longer than, 15 months.

1-205. **MINIMUM REQUIREMENT.** In cases where multiple construction contracts are to be inspected by a single A-E firm, the initial inspection contract award must include at least one active construction contract, with estimated start and completion dates for the other construction contracts. This follow-on work must be considered in the selection of a A-E firm to provide the desired services and in the negotiation of a fee with the selected firm. See paragraph 3-204 for guidance in negotiating for follow-on work.

SECTION 3 PROHIBITION ON PERSONAL SERVICES

1-301. **PROHIBITIONS ON PERSONAL SERVICES.** Office of Personnel Management (OPM) regulations indicate requirements which must be met by the Government in hiring employees. The Federal Acquisition Regulation provides that these laws and regulations shall not be circumvented through the medium of "personal services" contracting whereby services are procured by contract in such a manner that the contractor or his employees are in effect employees of the Government. The creation of an "employer-employee relationship" (EER) between the government and the contractor personnel is prohibited. SECNAVINST 4200.27A, entitled "Proper use of contractor personnel," discusses personal services at length. It explains the essence of the prohibition against contracting for personal services clearly:

> "The fundamentals are these. It is perfectly proper for the Government to purchase by contract what may be described as a finished product - a piece of hardware, a defined piece of research, or a report. Unless Congress has passed a specific statute to authorize something different, the Government may not contract out for the services of people who receive their assignments from Government personnel, work under the direct supervision of Government personnel, and whose relationship to the Government is thus no different from that of a Government employee. Where the Government wishes to procure services in this fashion, it must hire the people directly, in accordance with the Civil Service Laws."

1-302. **FACTORS TO BE CONSIDERED.** As an outgrowth of court cases in the late 1960s, the Civil Service Commission (CSC) General Counsel issued an opinion (referred to as the Pellerzi Opinion) setting forth six standards to be applied in determining whether a proscribed employer-employee relationship exists. Those six elements have been incorporated into FAR 37.104 and are as follows:

a. Performance by the contractor on-site.

b. Principal tools and equipment furnished by the Government.

c. Services applied directly to integral effort of agencies or an organizational subpart in furtherance of assigned function or mission.

d. Comparable services, meeting comparable needs, are performed in the same or similar agencies using civil service personnel.

e. The need for the type of service provided can reasonably be expected to last beyond one year.

f. The inherent nature of the service, or the manner in which it is provided, reasonably requires, directly or indirectly, Government direction or supervision of contractor employees in order:

* To adequately protect the Government's interest, or
* To retain control of the function involved, or
* To retain full personal responsibility for the function supported in a duly authorized Federal officer or employee.

In a supplement to the opinion which issued these six elements, the Civil Service Commission General Counsel cautioned that the absence of any one or a number of these elements would not necessarily mean that the proscribed employer-employee relationship does not exist but only that there is less likelihood of its existence. Moreover, any single element may not be significant unless its presence is felt to a substantial degree.

The Court of Appeals, in reviewing cases which prompted the CSC General Counsel to issue his six elements, held that the sixth element has a special status whose importance far exceeds the other five. A holding that a proscribed employer-employee relationship existed even in the absence of Government supervision would be incorrect because it would ignore the special significance of this sixth element.

The Defense Acquisition Regulation, in picking up the tone and intent of the preceding rulings, specified that there are not definitive rules for characterizing particular services as "personal" and "nonpersonal". There are many factors involved, all of which are not of equal importance. The characterization of services in a particular case cannot be made simply by counting factors, but can only be the result of a balancing of all factors in accordance with their relative importance.

1-303. DISTINGUISHING CONSIDERATIONS. In distinguishing between "personal services" and "nonpersonal services" the Comptroller General has considered the following:

a. Degree of direct Government supervision.

b. Furnishing of office or working space.

c. Furnishing of equipment and supplies.

d. The use of special knowledge or equipment.

e. The temporary character of services for which no Government employee is qualified or available to perform.

f. Whether the contract price is based upon the results to be accomplished (resulting in interim reports and a final report as necessary) rather than the time actually worked.

g. Whether the amount paid for compensation covers not only the contractor's time but use of his facilities, office staff, equipment, etc.

1-304. EXAMPLES OF PERSONAL VS. NONPERSONAL SERVICES. The following examples are provided for illustrative purposes and shall not be used as the basis for a determination in any specific case:

1-304.1 Personal Services. The following are examples of prohibited personal services contracts:

a. A contract for furnishing day-to-day drafting services in a Government office under the supervision of a Government engineer exercised directly or indirectly through a contract supervisor.

b. A contract for furnishing two inspectors full time for a year to perform "any and all inspection services which may arise" without specific reference to the exact contracts or an estimated quantity of services to be provided and the Government assigns the work, approves when leave may be taken, etc.

1-304.2 Nonpersonal Services. The following are examples of permitted nonpersonal services contracts:

a. A lump sum contract for inspection services where the specific services to be performed are defined and the construction contracts for which the services are to be provided are identified.

b. An open ended contract for consultant services in which the hourly rates and levels of effort for the various taskings are established and the services are requested and paid for in accordance with specific priced task orders.

c. A lump sum contract which specifically defines the requirements for various services and an estimated number of taskings. The contract is negotiated and awarded on the basis of the estimated number of taskings and includes provision for an adjustment in the total contract amount only if the actual number of taskings vary by more than 20% over or under that estimated .

1-305. DETERMINATION BY CONTRACTING OFFICER. It is the responsibility of the Contracting Officer to assure that there exist no proscribed personal services. Federal Acquisition Regulation paragraph 37.103 requires the Contracting Officer to make a written determination stating the procurement is proper prior to award. The Contracting Officer must consider the criteria in Federal Acquisition Regulation paragraph 37.104 before entering into any service contract, and obtain a legal opinion in any questionable case.

CHAPTER 2 CONTRACTING FOR INSPECTION AND SURVEILLANCE

Section 1. DETERMINING SERVICES TO BE PROVIDED

2-101. SERVICES NECESSARY. The services to be included in an inspection services contract depend on a number of factors: the number of construction contracts to be covered; the size, complexity, and duration of these contracts; the in-house capabilities available to the ROICC; the expected performance of the particular construction contractor(s) involved; and so forth. Using the "shopping list" presented in paragraph 2-104 below, one can determine the types of services normally available and then, weighing the needs against the funds available and the considerations mentioned above, can assemble a list of services to be provided in a particular situation. Having assembled the list of required services, a scope of work can be developed using the guidance presented in Section 2 of this chapter and a cost estimate for the services developed using the guidance found in Chapter 3. A sample scope of work, developed using most of the services listed below, can be found in Appendix A.

2-102. REQUIRED VS. OPTIONAL SERVICES. The services described below as "construction inspection services" must be performed on every construction contract. All of these services may be contracted on some projects while on other projects they may be performed with ROICC personnel. Regardless of who accomplishes them, these services are necessary to assure construction contract compliance. Often during the administration of a construction contract there is a requirement for additional services which are closely related to the inspection effort but are beyond those defined as inspection services. Once we determine these additional services are required we then have the option to perform them with ROICC personnel or to have them accomplished by the inspection contractor.

2-103. EVALUATING THE REQUIREMENT. In determining the requirement for these services, careful consideration should be given to the benefits to be received for the effort expended. Decide on the required level of effort and contract for only those services actually required.

2-104. SERVICES AVAILABLE. The services listed in the following subparagraphs are those which may be provided by an inspection services contract. Usually, not all services would be required in any one instance, unless the inspection services contract were in support of a particularly large construction effort. Except for certain functions which are reserved for Government personnel, the fact that a desired service does not appear in the listing presented below does not preclude the ROICC or EFD from including that service in an inspection services contract. Any such service included in an inspection contract should be a logical extension of the types of services normally provided by an architectural or engineering firm and within the original scope of the contract. Functions reserved for Government personnel are listed at the end of this chapter.

2-104.2 **Construction Inspection Services.** The bulk of the services provided under the typical inspection services contract fall into this category. The specific services normally provided include those listed below:

a. **Review of Submittals.** This includes reviewing and providing written comments and recommendations to the ROICC on items such as the following:

* Contractor's CQC Plan
* Initial and Final Network Schedules
* Bar Chart Schedules
* Schedule of Prices
* Contractor's Safety Plan
* Shop Drawings, including drawings, diagrams, layouts, catalog cuts, performance and test data, samples, finish chips, etc.
* Operation and Maintenance Manuals

b. **Attendance at Meetings.** This includes attending, taking notes, providing information to the ROICC or his representative at meetings such as:

* Preconstruction Conference
* Routine CQC meetings (weekly, biweekly, monthly, etc.)
* Safety Meetings
* Change Order Negotiations
* Claim meetings
* Scheduling Meetings
* Other conferences between the ROICC and the construction contractor as called by the ROICC

c. **Inspection and Surveillance.** The day-to-day inspection routines required to assure the the construction contractor is complying with the construction plans and specifications and with the contract requirements relative to CQC. These include the following:

* Routine inspection. For non-CQC jobs visit the construction site at adequate intervals during construction to assure compliance with the terms and conditions of the contract.
* Routine surveillance. Similar to a. above, except performed on CQC jobs. Assures compliance of the construction contractor with the CQC requirements of the contract. In doing so, views compliance with the construction requirements of the contract.
* Monitor compliance with contract environmental requirements.
* Report noncompliance with contract safety requirements.
* Monitor materials testing conducted by the construction contractor and his testing laboratories.
* Monitor testing of waste, gas, water, electrical, heating, ventilation, air conditioning, fire protection, and energy monitoring control systems.
* Monitor updating of as-builts and CQC submittal logs by the construction contractor.

* Review CQC Daily Reports and Construction Contractor Daily Reports for accuracy and completeness.
* Prepare, for each contract for each day inspection is actually performed, the Construction Representative's Daily Report (CRR).
* Coordinate and review monthly field pay estimates with construction contractor representative. Review construction contractor's monthly invoice.
* Prepare Construction Contract Compliance Notices for ROICC signature when material and/or workmanship are not in compliance with contract documents.
* Prepare a construction contract change order log for each contract inspected. (This primarily for the benefit of the inspection contractor, so that he can keep abreast of the changes occurring on the job that he is inspecting.)
* Assist the ROICC in conducting pre-final inspections of each construction contract. Prepare detailed discrepancy lists.
* Provide written input to the ROICC for his preparation of the construction contractor's final evaluation and the final evaluation of the design A/E (if different than the inspection A/E).
* Maintain appropriate files for each construction contract inspected.

2-104.2 **Reviews of Plans and Specifications**. Some major causes of change orders on construction contracts are conflicts, ambiguities, errors and omissions in the plans and specifications. Many of these change orders can be eliminated through the use of spot checks and constructibility reviews. **Do not use the design A-E to perform these reviews**; to do so would be paying twice for the required contract work.

a. **Spot Check**. A review of the construction plans and specifications to determine their completeness and accuracy. This check uses sampling techniques to provide a cursory overview of the plans and specs. In addition, depending upon the project, the spot check may include a detail check of one or more specification sections.

b. **Full Scale Completeness and Accuracy Check**. A complete, full scale review of the construction plans and specifications to ascertain their completeness and accuracy. Usually tasked when the spot check reveals significant errors or omissions. This involves a systematic check of plans and specifications similar to "Redichek" described in the supplements provided in CECOS courses on Design Management, Construction Contract Administration and Management, and Construction Contract Modifications.

c. **Constructibility Review**. A review of the construction plans and specifications to determine the constructibility of the facility. Such items as the types of materials used, the known or potential interferences to construction, site considerations, etc. are reviewed to determine whether the facility is readily constructible as designed.

In addition, such reviews provide us with a quality check to determine the completeness of the designer's plan and specifications. The most benefit is

obtained by performing the reviews and having the corrections included in the contract documents prior to advertisement award. Constructibility reviews should be conducted in accordance with NAVFACINST 11013.29 and P-446.

2-104.3 Construction Photography. On certain large or significant projects it may be necessary to maintain a photographic record of construction progress and it may be advantageous to have the inspection contractor provide the construction photographs. The minimum requirements should be specified in terms of the number of views, prints of each view, size of the prints, slides required, etc. necessary to establish a photographic record. The scope should also allow for an additional amount of photographs to cover situations that may arise during construction. The guide scope of work contained in Appendix A of this manual contains a list of photographic deliverables is for photographic services on a large multi-project inspection by A-E contract. This list should be modified to meet the needs of a particular project.

NOTE: Photographic services required to document claims, safety violations, strikes, or other significant occurrences are included in the scope of basic inspection services

2-104.4 Preparation of cost estimates for change orders. During the administration of a construction contract, it may become necessary to issue a change order to add or delete work. The designer of record usually prepares the engineering estimates for major changes involving substantial revisions. Field office personnel normally prepare the construction estimates for minor contract changes resulting from field changes or differing site conditions. In addition, field office personnel usually review and revise engineering estimates prepared by the designer to insure that they reflect actual field conditions at the time of the change. Also, prior to negotiating the change, we analyze the contractor's proposal and prepare the negotiating position. It may be beneficial to include all or some of these estimating services in the scope of the inspection contract. When the design A-E is used as the inspection contractor, field verification of conditions affecting the estimates prepared by the design A-E should be accomplished without separate tasking under the inspection contract. In order to keep the costs down, it is best to negotiate a lump sum for all estimates below a certain dollar amount, say $25,000, and unit prices for larger estimates. If this service is to be provided by the inspection contractor, the scope of work must make it clear to him that he first obtain a familiarity with the cost and pricing principles of the FAR and that only allowable and allocable costs may be used in the development of cost estimates. Additionally, the inspection contractor may be able to provide a significant benefit to the ROICC during change order negotiations by having prepared an analysis of the impact of the change order on the rest of the contract work. In addition to a narrative report detailing the impact foreseen by the inspection contractor, the inspection contractor may provide to the ROICC a CPM network analysis graphically showing the impact on the construction contractor's CPM network.

a. Cost Estimate Deliverables. When including estimating services in a inspection contract, make sure that the scope defines a deliverable product

such as a construction cost estimate or a report. **Do not contract for a number of hours of estimating time.** Also define an approximate quantity of estimates and analyses required and the cost range (high and low) of the change orders for which construction estimates are to be prepared. Estimates prepared for change orders resulting from design errors or deficiencies are the responsibility of the designer of record and should not be paid for as additional services under inspection Services with the designer of record.

2-104.5 **Review and Preparation of Record Drawings.** On construction projects with numerous drawings, the preparation of record drawings showing as-built conditions is a continuing important function performed by construction contractors. However, the performance of construction contractors in preparing and maintaining accurate as-built drawings may sometimes be marginal. Therefore, it is often helpful to have the inspection contractor not only verify the accuracy of the final record drawings but also monitor the preparation of the as-built drawings by construction contractors documenting changes as they occur. The inspection contractor can, as part of the inspection contract tasking, provide a check of the construction contractor's as-builts and assure they show known changes and errors, or can provide a set of interim record drawings to which the inspection contractor posted changes in pencil during the construction phase. These interim record drawings could then be presented to the design A-E for preparation of final record drawings. Also, if the interim record drawings were in the form of reproducible sepias, the using activity would have a set of usable reproducibles almost instantly upon completion of construction. Traditionally, we have used the design A-E or EFD personnel to prepare final record drawings regardless of who performed the inspection. It may be more beneficial, however, when contracting for inspection, to use the A-E firm doing the inspection to prepare the final record drawings because of their knowledge of the revisions and changes made during construction.

2-104.6 **Surveying.** It may be necessary to obtain the services of an independent firm to check surveys of construction contractor, to determine amounts of cut and fill for change orders, to lay out realignments, to locate underground utilities, to provide coordinates of structures, etc. The scope of work should include a description of deliverables for each type of work desired (reports, survey notes, plotted surveys, etc.).

2-105. **METHOD OF CONTRACTING.** Either an independent A-E firm or the design A-E may be used for most of the services described in this chapter. However, for certain services, we must use an independent A-E firm or perform the work using Government personnel. Before adding other construction related services

to A-E contracts, it should be determined whether the added services are in conflict with the intended method of operation. For example, spot checks and constructibility reviews would not be included in a contract with the design A-E, because to do so would preclude an independent coordinated review. On the other hand, it is NAVFAC's policy on most projects to use the design A-E for consultation during construction. It may be most beneficial to contract with the A-E designer of record for some of the additional services while using an independent A-E firm for the remaining services.

2-106. **AVOIDING PERSONAL SERVICES.** When contracting for the services described in this Chapter, it is required that all services will be provided under the direct supervision of the A-E firm's registered professional personnel. It is anticipated that all supervision and many of the tasks described in this Chapter will be performed by a professional. Care must be taken in both defining and administering the work to avoid having Government personnel either supervise or direct the contractor's personnel in the method of accomplishment. When such supervision or direction occurs, the boundary is crossed into a "personal services" contract which is prohibited. Additional information on personal services is included in Chapter 1 of this manual.

2-107. **FUNCTIONS RESERVED FOR GOVERNMENT PERSONNEL.** The overall management responsibility for the administration of a construction contract resides with the Resident Officer in Charge of Construction (ROICC). Certain functions have been determined to be solely the responsibility of the Government and may not be contracted out. This includes the authority to direct or approve the actions, etc, of the construction contractor. The inspection contractor may perform reviews and make recommendations to approve or disapprove the material reviewed but the actual approval or disapproval is the responsibility of the Government representative who is authorized to do so. In addition, the Department of Labor has determined that performance of labor standards interviews for Davis-Bacon compliance purposes are strictly a Government function and may not be contracted out.

2-108. **PRICING.**

2-108.1 **Term of Contract.** (See 1-204) Since the basic products are to be provided on a more or less continual basis, the contract is service in nature. As such, the specific period of work for pricing purposes will normally constitute one year with an option to continue efforts into a future time period. In the pricing of such contracts, the duration of the efforts required by the scope of work must be evaluated. The efforts involved in providing the services specified along with the interfaces with other ongoing inspection efforts of that firm and various applicable overhead rates (depending on the type of service required) makes pricing of this type contract extremely difficult. For this reason, pricing and estimating will be discussed in a separate Chapter. Regardless of the pricing structure to be used, it is NAVFAC's policy and intent that once a particular construction contract is being inspected by an A-E firm, the firm will complete inspection of project regardless of the duration involved. However, it is recognized that there may be situations where this intent cannot be fulfilled on either the Government's or the contractor's part.

2-108.2 How to Price. Whenever possible, the services described in this Chapter should be negotiated and paid for on a lump sum basis. In certain instances, however, it may be necessary to negotiate fixed rates or unit prices for the services to be performed and use an estimated quantity, subject to a Variations in Estimated Quantities clause in the contract. The price of constructibility reviews should be negotiated as a lump sum. In addition, an optional unit price should be negotiated for additional spot checks in the event that they are required. Payment for spot check and constructibility reviews shall be made upon the completion of the reviews and the acceptance of the reports. The price for construction photographs should be negotiated as a lump sum for the basic services (progress and completion photographs) and unit prices for other photographic services. When cost estimating services are included in the inspection contract, the price should be negotiated as a lump sum for all estimates and analyses of changes below a certain dollar amount (say $25,000) and unit prices for estimates and analyses required for changes above the specified dollar amount. The price for reviewing record drawings should be negotiated and paid for as a lump sum for the inspection services provided. If the effort to monitor the preparation of record drawings is not expected to be completed during the term of the contract, the contract price should only include the cost of the effort to be expended. Payment for surveying work will normally be on the basis of a pre-negotiated schedule of unit prices for each of the desired services, subject to the Variation in Estimated Quantities clause of the inspection contract. Payment for testing services can be based either on the assumption of a uniform use of a pre-negotiated block of services (that is, assume the provision of one-twelfth of the total services each month), or on a schedule of unit prices, subject to the Variation in Estimated Quantities clause of the inspection contract. Further guidance is provided in Chapter 3 .

Section 2. DEVELOPING THE CONTRACT SCOPE OF WORK

2-201. DEVELOPING A SCOPE. Having determined the services required, the next step is to draft the contract scope of work . This section provides guidance in drafting an appropriate scope of work. This guidance, along with that provided in Section 1 of this Chapter, should be carefully considered when preparing a scope of work for inspection services. Appendix A of this manual contains a guide scope of work which may be modified as necessary to suit the needs of a particular project. The individual services described in the preceding section and in the guide scope may not all be required on an individual project. In the case of a multi-project contract, it may be decided to require the inspection contractor to provide only some of the services on most projects and, as requirements dictate, require all services on a few projects.

2-202. PLANNING THE SCOPE OF WORK. The scopes of work typically prepared for our A-E contracts are generally brief. The scope of work for an inspection A-E contract must be clear, concise, and specific. The inspection contract is, in reality, a service contract (albeit for professional services), and the scope of work prepared for it must more closely resemble that of a service contract than that of an A-E design contract. A scope of work should be drafted to clearly, concisely, and completely define the obligations of the contractual parties with respect to the effort to be performed. It should be so stated that the language is free from redundancy and ambiguity. Preparing an outline is a good way to begin documenting a scope of work. In developing an outline for the scope of work, a list should be prepared of those things which the contractor is to do and those things which the Government is to do. The outline provides the drafter with an opportunity to display and analyze the concept of the work requirement before plunging into the actual writing of the scope of work. It allows the drafter to concentrate on the development of one idea at a time since the decisions of total content and sequencing have already been made.

2-203. WRITING THE SCOPE OF WORK. The problems of writing a good scope of work are very similar to some of the problems of writing an article for a technical journal. Common faults include sentences and paragraphs which are too long and unwieldy, unneccessarily abstract words, vague and ambiguous terms and excess and unrelated material. Consistency in terminology will contribute to clarity and usefulness. Provisions in the scope of work which do not directly contribute to the requirement should be avoided since they may unnecessarily add to the cost. The scope of work should only be as long as it has to be. The use of an outline, as suggested earlier, can help in keeping out unnecessary or redundant material. The following is a brief list of rules for more easily understanding writing:

a. Use short sentences in preference to long.
b. Use familiar words in preference to unfamiliar.
c. Prefer the simple to the complex.

d. Eliminate unnecessary words.
e. Use action verbs whenever possible.
f. Use graphic terms.
g. Write to express rather than to impress.

2-203. PRIMARY SERVICE. The primary service of the inspection contractor is to provide timely and accurate documentation relating to the quality assurance of the construction. The documentation includes reports, analyses, recommendations, cost estimates and the like relating to one or more specific construction contracts. For each required report, etc., the inspection contract provisions should set forth the type of report, frequency, format and instructions concerning preparation. Provisions should be included for special situation reports such as reports concerning notice of potential claims and status reports on known existing disputed items. The scope of work shall require the inspection contractor to report and document noncompliance with the construction contract requirements and inform the Government promptly. Reference is made to Appendix B of this manual which contains forms and detailed descriptions of the most common reports submitted by the inspection contractor.

2-204. PROFESSIONAL SUPERVISION BY A-E. A-E inspection services contracts shall require that all services rendered thereunder be performed subject to the direction and supervision of a registered professional who shall be responsible for assuring that personnel used in the performance of the contract have appropriate qualifications for the accomplishment of tasks assigned. Supervision and certain tasks will be performed by professionals but the actual field work and preliminary drafts of documentation may be performed by inspection personnel who possess appropriate qualifications. While the Government shall have no authority to specify what individuals will perform on any particular task, or the qualifications required for the performance of any particular task, contract requirements shall specifically provide that the A-E will remove any personnel the Government reasonably determines are unqualified or otherwise fail to adequately perform tasks assigned to them.

2-205. INSPECTION SERVICES VICE LEVEL OF EFFORT. The scope of work should be clear, concise and specific regarding the services to be performed and the documentation to be submitted. Inspection services shall not specifically set forth minimum levels of effort (e.g., one inspector full time, three site visits a week, etc.). While the effort required obviously must be considered in negotiating the contract price, the scope of work should require the inspection contractor to provide a sufficient number of qualified personnel with appropriate professional supervision to assure that the construction is accomplished in accordance with the construction plans and specifications and that the documentation and reports prepared are clear, concise, thorough and accurate.

2-207. SCOPE CAUTIONS. Care must be taken to assure that services procured under inspection contracts do not duplicate services which are already the

obligation of the design A-E (e.g., consultation, shop drawing review, etc.) The scope of work for inspection services will primarily consist of a list of tasks and functions and the reports and other documentation that the inspection contractor is to submit to the Government.

2-208. A-E INSPECTION STAFFING GUIDANCE. Broad general guidance in matrix form has been included in Chapter 3 for assistance in estimating staffing levels for A-E inspection services. The staffing guidance for inspection services is based on the number of construction contracts and work-in-place per month.

2-209. AUTHORITY OF THE INSPECTION CONTRACTOR. Contract provisions must clearly set forth the authority of the inspection contractor with regard to the provision of instructions to the construction contractor and the receipt of information from the construction contractor. These shall include:

a. The authority to stop work only when job site safety is such that human life is in danger.

b. An obligation to notify the construction contractor of apparent non-conforming work (but no authority to stop work or to direct the construction contractor in any way for this reason).

c. On-site review of construction contractor's reports with representative of construction contractor.

d. Obligation and procedure to record and immediately pass to ROICC actual and constructive notice of possible claims (e.g., changed conditions, Government-caused delays, defective specifications, etc.).

e. Monitoring submittal status to assure that the required submittals are forwarded and work actually performed is in accordance with approved submittals.

f. Taking of job site photos which reflect actual conditions, such photos usually to be taken jointly and with concurrence of construction contractor.

2-210. TRAINING OPTION FOR A-E FIRMS. The inspection contractor should accomplish inspection services with representatives qualified to perform construction surveillance and inspection. The "Progressive Training Chart" in NAVFACNOTE 12410 indicates required training in various trade divisions or equivalent experience necessary for qualified inspection personnel. A-E firms may obtain training for their representatives by enrolling them in the Army Corps of Engineers Construction Training Program. Arrangements can be made by the EFD Construction Division for A-E inspection representatives to attend courses offered through the Construction Training Program. A-E firms participating in the Construction Training Program must pay for all costs (tuition, travel, per diem, etc.,) of such training for their inspection representatives.

2-211. SUPPORT TO THE INSPECTION CONTRACTOR. The scope of work should list those facilities, vehicles, and utilities support which the inspection contractor is expected to provide for himself and his employees. In no case will the government provide the use of Government owned office space, equipment, vehicles or support services to the contractor without the specific approval of a Level 1 Contracting Officer.

2-211.1 Government Furnished Materials. The scope of work should list those materials to be furnished to the inspection contractor including construction plans and specifications, and Government forms and documents. If a separate construction representative's office is being provided under the construction contract for use by the inspection contractor it should be listed. The scope of work should also state if, and under what conditions, the Government will make utilities available to the inspection contractor.

2-211.2 Contractor Furnished Materials. The scope of work shall indicate those facilities and equipment which must be provided by the inspection contractor:

a. **Office Space and Equipment.** The inspection contractor should furnish all necessary facilities, equipment and materials necessary to perform his contract. This includes office space and necessary office furniture and equipment if it is not provided under the construction contract, all office consumables, all equipment and devices necessary to perform any testing, inspection or surveillance required, all necessary photographic equipment, all necessary safety equipment for inspection personnel, such as safety shoes and hard hats, any necessary mobile radio equipment, and any equipment which may be required to monitor adequately the compliance of the construction contractor with applicable safety regulations.

NOTE: Under special circumstances, such as for contracts in remote locations where there is space available separate from Government personnel, Government owned office space and furniture may be provided with the specific approval of a Level 1 Contracting Officer.

b. **Vehicles:** The inspection contractor shall provide all vehicles required for performance of the contract. These vehicles shall be registered with the Base Security Office in accordance with station requirements. Inspection contractor vehicles shall be clearly marked on each side of the vehicle with the name of the firm.

c. **Specifications, Standards, and Publications.** The inspection contractor shall be responsible for obtaining specifications, standards, and publications referenced in construction contract specifications.

2-212. MANDATORY PROVISIONS. Each A-E Inspection Services contract shall include the following provisions:

2-212.1 **Insurance.**

(a) The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance.:

Type of Insurance	Coverage Per Person	Per Occurrence	Property
Comprehensive General Liability	-	$500,000	-
Automobile Liability	$200,000	$500,000	$20,000
Workmen's Compensation	As required by Federal and State law.		
Employer's Liability	$100,000, except in states where worker's compensation may not be written by private carriers.		
Other Insurance	As required by State law.		

(b) Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or written statement of the above-required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Government in such insurance shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in on event less than (30) days after written notice thereof to the Contracting Officer. In addition, the comprehensive general and automobile policies shall contain a provision worded as follows:

"The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy."

(c) The Contractor agrees to insert the substance of this clause, including this paragraph (c), in all subcontracts hereunder.

2-212.2 **Conduct of Inspection Personnel.** All inspection contractor employees and subcontractor personnel are prohibited from engaging in any action which might result in or reasonably be expected to create the appearance of:

(a) Soliciting or accepting financial or other consideration directly or indirectly from construction contractors performing work for the Naval Facilities Engineering Command.

(b) Giving preferential treatment to any person affiliated with construction contractors or suppliers engaged in performing or seeking to perform contracts with the Naval Facilities Engineering Command.

2-212.3 Restrictions on Inspection Contractor. The inspection contractor and its affiliates will not be permitted to compete for construction contracts covered by this inspection contract or being performed at the same time and within the same area covered by the inspection services.

2-213. SUBCONTRACTORS, OUTSIDE ASSOCIATES AND CONSULTANTS. Inspection services contracts shall include in the negotiated lump sum contract price the cost of any subcontractors that the inspection contractor intends to use in the performance of the contract work. The contract shall provide that the inspection contractor will, if necessary, bring in other specialists and advisors as may be appropriate at no increase in contract price unless such additional advice is required in connection with acts of God (e.g., earthquakes, hurricanes, etc.) or major unforeseen site conditions that could not have reasonably been anticipated at the time the contract was negotiated.

2-214. SERVICES ON STARTED CONSTRUCTION CONTRACTS. At the time of award of the inspection contract, construction may already be in progress on some or all of the construction contracts for which the A-E inspection contractor is to provide services. For example, some of the items which would normally require review by the inspection contractor may have already been reviewed and approved by the Government and the preconstruction conference may have been already held. The Government will inform the A-E selected to provide a price proposal of the status of such items prior to requesting a price proposal. The proposer shall then take that information into account before submitting the price proposal to the Government.

2-215. DOCUMENTATION REQUIREMENTS. Detailed instructions for all submittals required should be provided to the inspection contractor at the Inspector Orientation described in Chapter 4 of this manual.

Section 3. SOLICITATION AND SELECTION OF A CONTRACTOR

2-301. METHOD OF PROCUREMENT. As stated in Chapter 1, for procurement of inspection and surveillance services, the Naval Facilities Engineering Command uses the procedures set forth in the Brooks Act as amplified by the Federal Acquisition Regulation and the NAVFAC P-68 Contracting Manual.

2-302. A-E CONTRACTOR OPTIONS TO BE CONSIDERED. Once it has been decided to contract for inspection services the next step, even before solicitation of a design A-E, should be to determine whether it is more beneficial to use the design A-E or an independent A-E to perform the inspection services. This is especially true in instances when there is a possibility of using the design A-E to perform inspection services because the Commerce Business Daily (CBD) announcement and scope of work must address the possibility of including inspection services in the A-E contract in order for it to be an in-scope change to the contract. Several factors must be considered in making this determination.

2-302.1 **When to Use the Design Architect-Engineer (A-E).** The use of the design A-E for inspection is particularly effective in those cases that require the full time presence of a firm or the part time efforts of a firm located near the construction work itself. The design A-E normally will be retained for the performance of inspection services when most of the following conditions occur:

a. One construction contract is involved.

b. The work is relatively isolated from any established NAVFAC field office and requires some presence at least several days of the week.

c. The A-E is a local firm or maintains a local office near the construction site.

d. The work is of unusual complexity.

e. The nature of the construction is such that it is deemed necessary to assure continuing responsibility throughout the design and construction phases.

2-302.2 **When to Use Another Architect-Engineer (A-E) Firm.** Most of our construction contracts do not require the full time presence of an inspector nor are they sufficiently remote from an existing ROICC office to rely totally on the designer of record. In these cases, the most economical means of contracting is to hire an A-E firm to inspect numerous ongoing concurrent construction contracts. Normally an A-E firm other than the design A-E will be retained to provide inspection services when some or all of the following conditions occur:

a. Inspection services are to be provided for several construction projects located within a short drive of the A-E office.

b. The inspection services for several contracts require commonality of technical inspection skills.

c. None of the projects is of such magnitude or complexity as to warrant a separate A-E contract dedicated solely to that project.

d. The A-E of record cannot provide the needed technical expertise.

e. Several contracts require special technical expertise (roofing, electrical switchgear, underground piping, etc.) not available from government resources.

2-303 METHOD OF SOLICITATION.

2-303.1 Solicitation for Inspection Services Using the Design A-E. When there is a possibility that the design A-E may be used for inspection of construction, the initial solicitation in the Commerce Business Daily (CBD) for the design services should outline a requirement for this effort. The ability to provide inspection services would be considered in selection of the design A-E. In addition, the scope of work for design services should include a statement that the government may, at its option, have the design A-E provide construction inspection services during construction of the facilities designed and if the government decides to exercise the option, the scope of the inspection services will be included as a negotiated change to the contract at a later date. If the possibility of including inspection services is addressed in both the original CBD solicitation and design scope, it is then considered within the scope of the Architect Engineer contract to change order that contract for the inspection efforts necessary. If a design A-E has been selected and it is subsequently decided to include inspection services within the scope, it is treated as an out-of-scope change order as discussed in Section VII, Part 3 of P-68.

2-303.2 Solicitation for Inspection Services Using a Separate A-E Firm. When it is intended to use a firm other than the designer of record for inspection, the services are to be procured through a separately solicited contract using standard A-E contract procedures. If appropriate, the solicitation should identify the requirement for the inspection of several projects to give firms the maximum advantage of deciding if they are interested in the particular work in the geographic area considered. For maximum economy, all projects to be inspected under a single contract should be in a relatively small geographic area (e.g., a 50-mile radius) which can be serviced by single office of the firm.

2-304. SELECTION CRITERIA FOR INSPECTION CONTRACTS. In selecting a contractor to accomplish the inspection and surveillance effort, we must evaluate, as a minimum, the following:

a. Experience of the firm in inspection/surveillance.

b. Professional expertise of firm.

c. Experience of key personnel to be used on the job.

d. Location of firm in relation to construction contracts to be inspected.

e. Experience and familiarity with Government/DOD specifications and inspection requirements.

f. Capability of the firm to undertake work.

g. Volume of previous business awarded firm.

2-305. ADDITIONAL SELECTION CRITERIA. When considering to exercise an option with the design A-E or when soliciting separate A-E firms for inspection services, the prospective A-E firms should be asked, as part of the selection process, to outline their plans for carrying out the work. The plans presented by the responding A-E firms should be typewritten, logically organized, and should include, as a minimum, the following:

a. A statement of the inspection contractor's general approach to providing the inspection/surveillance required including estimated frequencies of efforts.

b. A description of the inspection contractor's organization and of the duties and authority of the personnel involved in this contract. Include a description of the relationship of home office personnel to job site personnel.

c. An initial assignment chart indicating the responsibilities of inspectors for specific construction contracts.

d. Names of key inspection contractor personnel both on-site and home office, along with the descriptive titles for these personnel.

e. A listing of outside organizations, such as testing laboratories or consultants, which will be employed by the inspection contractor and a description of the services these firms will provide.

Section 4. FUNDING FOR INSPECTION AND SURVEILLANCE CONTRACTS

2-401. **PROGRAM IV.** All funds for inspection and surveillance efforts are provided through the NAVFAC Command Management Plan (CMP) Program IV operating budget except those isolated cases where authority exists that permits these services to be directly reimbursable. Inspection services are not a project expense and are to be accounted for under the appropriate cost account.

2-402. **MISSION MANAGEMENT FUNDS.** The funds utilized for contract inspection are the same as would be applicable to Government efforts, i.e., mission management O&M,N for projects that are end chargeable to O&M,N and O&M,MC; SIOH for those projects that normally earn SIOH; and REIMB in selected cases. It is recognized that this will result in multi-funded contracts for inspection services under certain conditions.

2-403. **PROPER FUNDS.** In cases where the contract requires more than inspection services, care must be taken to assure that proper funds are cited for the inspection portion. For example, project funds should be used for preparation of record drawings while Program IV mission management funds such as SIOH or O&M,N should be used for inspection. Prior to finalizing the scope of work, the source and availability of funds for each of the contemplated services should be verified with the EFD Comptroller.

CHAPTER 3. PRICING INSPECTION SERVICES

Section 1. DETERMINATION OF STAFFING REQUIRED

3-101. TASK ORIENTED NEGOTIATIONS. In pricing inspection services, it should not be assumed all projects require full time inspection. Level of effort pricing derived at by multiplying the number of full time inspectors by the duration of the construction contract is not to be used. Estimates and negotiations must be task oriented and the estimate should be developed by considering the effort required to accomplish each of the tasks defined in the scope. By estimating on a task oriented basis, it may be found that a requirement exists for a part time inspector (less than 8 hours a day) or that the inspection services may be accomplished by working 3 or 4 days a week. When this occurs on contracts with firms located in an area that has several other ongoing efforts, negotiations should be on the basis of part time inspection. However, it may be found that even though a part time effort is estimated, circumstances warrant the inspection contractor's having a full time dedicated person. If full time efforts are to be negotiated for projects which may not need full time inspection, consideration should be given to adding additional work that may be phased in and compensated for in efforts already purchased.

3-102. ESTIMATING SIZE OF INSPECTION STAFF. Often when multiple projects are being inspected under a single A-E contract, there is sufficient overlap in the construction phasing and associated inspection tasks to allow a more efficient use of inspection personnel. These efficiencies should be considered in negotiating inspection services for multiple construction projects. The staff required to inspect multiple construction projects is a function of a number of factors including the number, size and complexity of the projects being inspected. Each project will at times have its own requirements for more or less than average inspection services. On the following page, a table is provided as guidance in estimating the staffing for a multiple project contract . This guidance should not be used as the sole basis for determining staffing, but it may be used to compare with the staffing estimated from the tasks specified in the contract scope of work. This table assumes that the construction contracts to be inspected are within a 50 mile radius. It should be noted that subjective judgment on the complexity of the work to be inspected and other considerations can alter the staffing guidance indicated by the table.

3-103 INSPECTION CONTRACTOR TO DETERMINE ACTUAL EFFORT WORKED. Regardless of the number of manhours used as a basis of negotiations, when a lump sum contract for inspection services is awarded, it is the inspection contractor's responsibility to determine and assign sufficient personnel to assure the construction is being accomplished in accordance with the plans and specifications. Thus it is the inspection contractor's determination as to when more or less inspectors can be actually assigned. The fee would not be adjusted to reflect these fluctuations but the actual work effort should be considered in negotiation of options for future work.

TABLE 3-A STAFFING GUIDANCE FOR INSPECTION SERVICES

NUMBER OF CONTRACTS INSPECTED	INSPECTION STAFF REQUIRED FOR TOTAL WORK-IN-PLACE ($ X 1000)/MONTH							
	250	500	750	1000	1250	1500	2000	2500
2	1	2	2	3	3	4	6	7
4	1	2	2	4	4	4	6	7
6	2	2	3	4	4	5	6	7
8	2	3	3	4	5	5	6	7
10	2	3	3	4	5	5	6	8
12	3	3	4	4	5	5	6	9
14	3	3	4	4	5	6	7	9
16	4	4	5	5	5	6	7	9
18	4	4	5	5	6	6	8	10
20	4	4	5	5	6	6	8	10
22	5	5	5	6	6	7	8	10
24	5	5	6	6	6	7	8	10
26	5	5	6	6	6	7	9	10
28	5	6	6	6	6	7	9	10
30	5	6	6	6	7	8	10	10
35	6	6	6	7	7	8	10	12
40	7	7	7	8	8	8	10	12
45	8	8	9	9	9	9	11	12
50	9	9	10	10	10	10	12	14
55	9	9	11	12	12	12	12	14
60	9	9	12	12	12	14	14	16
65	9	10	12	12	12	14	16	16
70	9	10	12	12	14	16	16	18
75	9	10	12	12	14	16	16	20

NOTES: 1. WIP Figures in table are based on 1985 construction costs.
2. For inspection of multiple projects with a total WIP/Month of less than $250K use one Inspector for Every 6 to 9 projects

HOW TO USE THE TABLE: To find the approximate number of inspectors required to inspect a multiple number of construction contracts determine the total average work-in-place per month and locate the staff required at the intersection of the total WIP and the number of contracts being inspected. (Example: To inspect 16 contracts with an average total WIP of $750 K per month it would require a staff of approximately 5 inspectors. The table may also be used to determine the approximate number of inspectors required for each month of the inspection contract by using the number of active construction contracts and the total estimated WIP for that month.

Section 2 GENERAL GUIDANCE IN PRICING SERVICES

3-201. COST AND PRICE ELEMENTS. The basic elements of pricing inspection services are like most other A-E contracts. A direct labor cost involved in inspection of the construction contractor's efforts; another for reviewing that work and providing support as necessary and lastly an overhead portion. Not all of these factors vary in direct relationship to the direct inspection effort required on construction contracts. This is especially true as additional work may be added at a later point in time and some may be deleted. The percent of indirect cost to direct cost should decrease as the volume of the contract expands to provide additional direct services. Personnel negotiating and administering these contracts should remain aware of these conditions.

3-201.1 **Direct Effort.** In establishing price for this type of service, the easiest element to price is the direct effort involved in inspecting the work. The person preparing the estimate should estimate the number of hours and the duration involved in executing the entire inspection effort. This effort should run for the duration of the contract as specified in the construction contract plus a nominal sixty or ninety days (or some other greater period if reliable historical information is available) and pricing for the direct effort based on a lump sum over that duration. Individual effort to accomplish the inspection tasks should be considered accordingly. If the total effort estimated exceeds the initial award period dictated by funding constraints, pricing of the initial effort would then be based on the portion of the work estimated to be accomplished during that period. As discussed in Section 1 of this Chapter when more work is added to the contract, there may not be a need for adding direct effort as phasing with other work being inspected may be compensated for in efforts already purchased. By efforts already purchased, it is meant that the individual may not be needed full time to do the inspection for the contracts at that time but circumstances warrant the contractor having a dedicated full time person. If full time efforts are required, it should be considered in the pricing structure. Also when negotiating the direct effort assure that the level of expertise matches the work involved. In other words, do not pay professional engineering salaries for work that can be accomplished by sub-professionals. Hourly rates and expertise included in inspection services should be compatible with those of Government employees doing the same work. The practice of using professional engineers for inspection is expensive and should be avoided. A work sheet for estimating the direct effort associated with inspection services is included as Appendix C.

3-201.2 **Supervision/Office Expenses.** The next increment is involved with the supervision or office type expense for the field portion of the work. The effort to review the work of on-site inspectors by professional personnel, support factors like clerical work, vehicle support, etc., must be estimated for each item of work and included as an indirect cost. (May also be considered as a direct cost if the efforts can be related directly to the product being provided.)

3-201.3 **Overhead.** (FAR 31-201) Office overhead must be considered. It should be recognized in this pricing segment that firms may experience various overhead rates for different types of work. Normally, A-E firms have a lower overhead rate for inspection type work than for design work since the support costs and elements of risk and uncertainty are different. For this reason, the overhead rates applied to the direct labor efforts expected of inspectors and reviewing engineers may be different on an individual contract. These are all subject to negotiation and evaluation by the Government as well as auditors if the case warrants. If the inspection contractor is to be provided any support by the Government such as the use of a trailer or office space, an appropriate reduction in the overhead rate should be obtained.

3-201.4 **Profit.** (FAR 15-905) The final element to be considered is profit. It may be that the inspection work has very little risk involved. The inspector is responsible for assuring that the construction is carried out in accordance with the plans and specification. As such, the negotiated profit rate should be lower than that paid for design work.

3-202. **RECOMMENDED PRICE RANGES FOR INSPECTION SERVICES.** The following table provides the recommended ranges for pricing of inspection services. The ranges in the table are based upon the historical averages negotiated in a cross section of inspection A-E contracts for services. Care should be exercised in the application of these guidelines and the specific requirements and circumstances associated with each individual contract must be considered. In all cases, the negotiated price shall be fair and reasonable for the services to be provided.

TABLE 3-B

PRICING RECOMMENDATIONS FOR INSPECTION SERVICES

ITEM	RECOMMENDED RANGE
Average hourly rate for inspection	GS-8 to GS-10 Level
Average hourly rate for supervision	GS-11 to GS-13 Level
Supervisory Time	10 to 20% of inspectors time
Overhead rates	
For full time inspectors	30 to 60%
For home office support	110 to 140%
Profit	7 to 9%

3-203. **CONTRACT DURATION.** Although the basic pricing mechanism includes an evaluation of the total cost to inspect an individual construction project, normally A-E contracts for inspection services are only awarded for work within one twelve month period. Therefore, the estimated price is based on the effort that will be expended during the first year, attributable to various elements of direct and indirect cost. Continuation of this service into a second year will depend upon availability of funds, satisfaction of the Government in contracting with the firm. and an evaluation of level of effort to date and an expected level of effort in subsequent periods. In this type of pricing structure, an evaluation is made of the effort expended during the first year and the price is negotiated for the next year. This method is fairest to all parties and is compatible with contracting with a professional firm. Continuation of these services after the one year period is not merely an execution of an option. It can be fairly complex if actual construction progress differs significantly from what was originally expected or if complications develop during construction.

3-204. **NEGOTIATION OF OPTIONS.** When negotiating for inspection services on a single project with a construction duration in excess of the award period for the inspection services, it may be beneficial to negotiate the price for all inspection required through the completion of construction. The initial award amount and fee for subsequent options shall be the sum negotiated for each respective period of award. However, when the services are for multiple projects and/or it is difficult to accurately estimate the price for the entire inspection effort at one time, you should negotiate the fee for an initial award period of one year. If it is decided to continue the services, then, prior to completion of the first year (e.g., during the eleventh month), negotiate the fee to be paid for the next twelve month period. No adjustment will be made to the lump sum fee for the first twelve month period, but those payments and the status of the actual work performed, in contrast to the initial estimated work and negotiated fee, will be considered in negotiating the fee for the second twelve month period. This process shall be repeated on an annual basis, as appropriate.

3-205. **UNIT PRICE ADJUSTMENTS.** Often it will be necessary to increase a requirement for certain additional services where it may be difficult to determine the extent of the requirement. In such cases, unit price adjustment factors should be negotiated and applied when the additional services are used. Whenever unit price adjustments are included in a contract, care should be taken to assure that the proper funds are available before ordering any unit price services.

3-205.1 **Unit Price Adjustments for Scheduled Services.** When including other services such as spot checks, constructibility reviews, construction photography, and cost estimating in an A-E contract for inspection services, a lump sum price should be negotiated for the definable basic services. Then negotiate a schedule of unit prices or fixed fees for application to the additional services when ordered and performed.

3-205.2 **Unit Price Adjustments for Delays, Overtime, and Construction Changes.** Additional consideration may be included and unit price adjustment factors negotiated where the inspection contractor's costs are increased because of Government caused delays, overtime requirements and Government change orders that extend the construction time. With the exception of Government delays and change orders, do not normally consider unit price adjustments. Adjustments for construction contractor caused delays, overtime, etc. on contracts for the inspection of multiple projects would not normally be considered because the averaging of the work on multiple projects, should mitigate additional costs . To some extent, delays and overtime can be considered as a routine occurrence on every construction project and should be considered in arriving at a price for the lump sum portion of the work. The inspection contractor must make his own determination whether or not the inspector must be present when the construction contractor works overtime. Overtime should only be paid on a unit price basis if it is specifically directed by the Government. In addition, when full time inspection is contracted and less than a full time effort is required, the scope should include provisions for adding work that falls between the limits of the required and the contracted efforts. When negotiating unit price adjustments for overtime, only include the overtime premium or the price difference between the normal rate and the overtime rate. When an adjustment in the contract price is made to cover overtime work, only the overtime premium would be included in the adjustment since the price to perform the work during normal hours is included in the lump sum price for inspection services.

3-205.3 **ROICC Concurrence Required.** If the inspection contractor feels that scheduled services are required, and the ROICC concurs, a request defining the extent of the additional services shall be issued by the ROICC. After the services are satisfactorily performed, they would be paid for at the negotiated unit price in the fee schedule of the contract.

3-205.4 **No Adjustments for Inspection Contractor Deficiencies.** If the designer of record is used for inspection services, no adjustments shall be made to cover increased inspection costs resulting from design errors or deficiencies.

3-206. **BUSINESS CLEARANCE REQUIREMENTS.** The total anticipated contract award amount, including all amendments and/or options shall be used in determining the level of approval for business clearances for inspection contracts .

3-207. **ALLOWANCES FOR CONSTRUCTION DELAYS.** As mentioned previously in pricing the direct effort of inspection services, the duration of the services should be longer than that of the construction being inspected to allow for normal construction delays and extensions. When a longer duration is included in the inspection contract, the lump sum price negotiated for the inspection services would include an allowance for any extended services required as a result of normal construction delays that fall within the duration of the inspection contract. No adjustment in the contract price would be made if the actual requirement is less than that estimated, but the information would be used in arriving at estimated quantities to be included in subsequent options.

3-208. DEVELOPMENT OF A FEE SCHEDULE. In including provisions for price adjustments in an inspection contract, there should be a fee schedule for the contract listing all of the lump sum prices for the basic services and the unit prices to be paid for additional services, if required. Whenever possible, define the additional tasks and negotiate a fixed unit price for accomplishment. Quite often, however, it may be impossible to define all of the tasks for which additional services are required. This most frequently occurs when overtime is required or when a Government directed change is issued. To allow for such instances, negotiate a manday rate and an overtime premium to be applied when required. The following is a sample fee schedule listing the various lump sum and unit priced services described in this manual. If it is anticipated that certain lump sum tasks will not be completed during the contract duration, include only the price of the portion of the work which will be completed in the award period.

TABLE 3-C
SAMPLE FEE SCHEDULE FOR INSPECTION SERVICES

A. LUMP SUM PRICES FOR SERVICES	
1. Inspection Services	$_____
2. Spot check and Constructibility Reviews	$_____
3. Cost Estimating Services for Changes Under $25,000	$_____
4. Record Drawings	$_____
5. Construction Photography	$_____
B. UNIT PRICES FOR ADDITIONAL SERVICES	
1. Manday rate for Inspection	$_____/day
2. Premium rate for Overtime	$_____/hr
3. Additional Spot Checks	$_____EA.
4. Cost Estimating Services	
a) $25,000 to $50,000 Changes	$_____EA
b) $50,000 to $100,000 Changes	$_____EA
c) $100,000 to $500,000 Changes	$_____EA
d) $500,000 to $1,000,000 Changes	$_____EA
5. Photographic Services	$_____EA
a) 8"x10" Color Prints	$_____EA
b) 35 mm Slides	$_____EA
c) Instant Prints	$_____EA

CHAPTER 4. ADMINISTRATION OF A-E INSPECTION SERVICES CONTRACTS

Section 1. ADMINISTRATIVE PROCEDURES

4-101. GENERAL. Administration of A-E contracts for inspection services shall follow the procedures described in NAVFAC P-68 and the guidelines contained in this manual.

4-102. DIVISION OF RESPONSIBILITY. A clear division of responsibility must be maintained between the Government and the inspection contractor throughout the term of the contract. The overall responsibility for the administration of the construction contracts resides with the ROICC. The inspection contractor has no authority to direct the construction contractors in any way regarding methods or procedures and shall not interfere with the construction contractor's methods of performance unless life or property is endangered. All direction to the construction contractor must come from an official Government representative. The specific responsibility of the inspection contractor is to inform the Government whether or not the work of the construction contractor meets the construction contract requirements. The ROICC or his authorized representative will sign upon all correspondence and specific directives to construction contractors.

4-103. PRINCIPAL GOVERNMENT REPRESENTATIVE. The Government should designate one person as the principal person responsible for monitoring the adequacy of the performance of the inspection contractor, for day-to-day liaison with the inspection contractor, and for initiating (not necessarily negotiating) the necessary change orders to the inspection contract. The ROICC office must ensure that inspection contractor's performance is in compliance with the terms of the inspection contract. The most appropriate person for this responsibility, in most ROICC offices, is the supervisory construction representative. Whoever is designated this responsibilty should have these duties accurately reflected in his or her position description.

4-104. PROVIDING THE INSPECTION CONTRACTOR WITH DAILY CORRESPONDENCE. The Government should provide the inspection contractor with copies of all submittals and related correspondence between the ROICC and the construction contractor so the inspection contractor will have the information available for the inspection of the construction work.

4-105. DOCUMENTATION REVIEW. The appropriate Government representative should review all documentation provided by the inspection contractor and the construction contractor on a daily basis. The inspection contractor's reports and comments on the construction contractor's reports must clearly portray any discussions the inspection contractor's representative had with the construction contractor. Elaboration on any of the comments between the inspection contractor and the construction contractor must be made by an authorized Government representative. Any conflicts between the inspection contractor's report and the construction contractor's report should be expeditiously resolved.

4-106. OVERSIGHT OF THE CONTRACTOR. The ROICC shall establish specific procedures to assure adequacy and quality of the services provided under the inspection contract. Sampling procedures shall be used to check the accuracy and completeness of reports made by the inspection contractor and the sufficiency of services performed.

4-107. INSPECTION AND SURVEILLANCE CONFERENCE. Prior to starting inspection services, the ROICC should conduct an inspection and surveillance conference with the A-E to review construction requirements and discuss administrative procedures. The A-E should be represented by personnel responsible for supervising the inspection services and, if possible, by the A-E inspection representatives. Appropriate Government representatives should be in attendance and especially the person assigned to coordinate the inspection services and serve as point of contact for the inspection contractor. At this meeting, the Government representative should review inspection and documentation procedures and furnish certain forms and information needed by the inspection contractor to adhere to the inspection requirements of the contract. The Government may also furnish the inspection contractor with a list of any items requiring special or significant attention by the inspection contractor. Such items might, for example, include unusual or uncommon construction items such as mechanical conveying systems, sophisticated control devices, or might include items which, while not necessarily unusual or uncommon, are critical, such as placement and connections of major structural components, placing mass concrete (as in a drydock) or installation of items necessary for the physical security of a weapons system.

4-108. INSPECTION SERVICES INFORMATION. The inspection contractor should be requested to provide the ROICC with any revisions to his proposed inspection plan resulting from negotiations. This should include, as a minimum, an update of the information listed in paragraph 2-305 of this manual.

4-109. INSPECTION ORIENTATION. The scope of work should require the inspection contractor to establish and provide an orientation to assure that all personnel performing inspection services under the contract are able to execute their duties in an expeditious manner. Occasionally new inspection personnel who are not familiar with the specific procedures and requirements of the scope of work are assigned to inspection contracts . Usually this occurs when the inspector originally assigned to the project is reassigned to another project or leaves the firm. By requiring the inspection contractor to provide new employees with orientation, problems associated with turnover in contractor personnel should be avoided. The orientation to be provided by the inspection contractor shall include, but not be limited to, instruction in properly completing the forms to be used by the inspection personnel; a review of administrative procedures to be used in meeting the requirements of this contract; an explanation of the authorities and responsibilities of the inspection personnel and other personnel in the inspection organization as they relate to this contract; a review of general requirements levied on construction contractors, such as safety requirements, environmental protection requirements, quality control requirements, and labor standards requirements and any necessary training in the actual technical procedures to

be used in construction inspection. This orientation will be provided by the inspection contractor to assure that employees performing inspection services are properly prepared for their work.

An orientation of station procedures should be provided by the Government and should consist of general base orientation, applicable base regulations; base fire, security, and emergency medical procedures; description of the EFD/OICC and ROICC organizations; relationship of the Government to contractor personnel; and other relevant administrative information.

4-110 A-E LIABILITY FOR DEFICIENCY IN INSPECTION. Whenever there is a modification required in the construction as a direct result of an error or deficiency in inspection, the OICC shall consider the extent to which the inspection contractor may be reasonably responsible for such error or deficiency under the clause in FAR 52.236-23 (entitled "Responsibility of the Architect-Engineer,"which is included in the standard A-E contract form), and if so, whether any increased costs to the Government resulting from such error or deficiency shall be assessed against the A-E inspection contractor. The determination and subsequent action in this regard shall be documented in the contract file. (See NAVFAC INST. 4335.3A)

Section 2 PAYMENT FOR INSPECTION SERVICES

4-201. PAYMENT FOR INSPECTION SERVICES. Processing of payments for inspection services shall be in accordance with the General Provisions of the A-E contract. The inspection contractor shall submit monthly invoices using NAVFAC Form 10-7300/41 and estimates of the amount and value of the services performed. Upon approval of the estimates by the Government, the invoices will be processed and payment made. The monthly rate of payment should not necessarily be the same for every month but the total of the monthly payments for the contract award period shall equal the total price of the contract for that period.

4-202. PAYMENTS FOR LUMP SUM SERVICES. Care should be exercised in the review and approval of estimates to insure that payments are based upon the tasks accomplished and not solely on reimbursement for manhours worked. For example, if the inspection contractor has satisfactorily completed 50% of the contracted services, the total payments would equal 50% of the lump sum fee regardless of whether the actual manhours worked were more or less than those estimated for the same tasks during negotiations.

4-203. PAYMENTS FOR UNIT PRICED SERVICES. When unit prices are included in an inspection contract, payments shall be based upon the number of units ordered and satisfactorily completed during the payment period.

APPENDIX A

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NOTE: This Guide Scope of Work is available on floppy disk from NAVFACHQ Code 023.

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GUIDE
SCOPE OF WORK
FOR
CONSTRUCTION INSPECTION AND SURVEILLANCE SERVICES

A-E CONTRACT NO._____

1. GENERAL REQUIREMENTS.

1.1 Project Information. The Architect-Engineer (A-E) firm, hereinafter referred to as the inspection contractor, shall provide inspection services including, but not limited to those described below, in order to assure that construction is being performed in compliance with the contract drawings and specifications on the following project(s):

_____

_____

_____

****

NOTE: Indicate construction project information including: contract number, title, location, construction cost, estimated start date and duration of the project(s). If there are a large number of construction contracts to be inspected with different estimated start and completion dates, or with different services to be performed by the inspection contractor on the different construction contracts, or at different locations, it may be advantageous to put that information in an appendix or annex at the end of the scope of work, rather than putting that information here.

****

1.2 Inspection Contractor's Responsibility. The overall management responsibility for the administration of a construction contract resides with the Resident Officer in Charge of Construction (ROICC). The primary responsibility of the inspection contractor is to furnish the ROICC or his designated Government representative(s) with documentation indicating whether the construction inspected conforms to the contract requirements. The inspection contractor has no authority to direct the construction

contractor(s) in any way regarding methods or procedures and shall not interfere with methods of performance unless life or property is endangered. The ROICC or his designated Government representative will be responsible for,and sign, all correspondence and specific directives to the contractor(s).

1.3 **Personnel.** The inspection contractor shall provide technically competent and appropriately qualified personnel for construction inspection. The inspection personnel shall have a knowledge of construction scheduling methods and of building and construction crafts since detailed inspections shall be made to verify that the specified workmanship is obtained. The inspection contractor shall be responsible for providing the necessary managerial, engineering, and clerical support personnel. The inspection contractor shall, at no additional costs to the Government, procure individual specialists necessary to provide technical services required on a periodic basis, should these services not be available from employees of the inspection contractor.

1.4 **Professional Supervision by A-E.** All services provided under this contract shall be performed under the supervision and direction of licensed registered professional engineers or architects of the firm. They shall be responsible for assuring that personnel used in performance of the inspection services have appropriate qualifications for accomplishment of the tasks assigned. The Government may, in writing, require the inspection contractor to remove from the work any of its personnel the Government reasonably determines are unqualified or otherwise fail to adequately perform tasks assigned to them.

1.5 **Applicable Documents.** The following documents provide specific and general guidance in the performance of inspection services under this contract. In providing inspection services, the inspection contractor shall be guided by these documents and the procedures, requirements, and methodology described in the documents shall be used by the contractor unless they conflict with those in this scope of work, in which case, this scope of work shall govern.

1.5.1 **Specific Guidance on Safety.**

EM 385-1 U.S. Army Corps of Engineers Safety and Health Requirement Manual.

1.5.2 **General Guidance for Inspection and Surveillance.**

NAVFAC P-445, Construction Quality Management

NAVFAC P-455, Books 1 through 16 - Construction Engineering Handbook

NAVFAC P-456, Volumes 1 through 4 - Construction Inspection Guide

****

NOTE. Care must be taken to insure that references to these documents are appropriate and that the latest issue is referenced.

****

1.6 **Inspection and Surveillance Conference.** Prior to the start of inspection services by the inspection contractor, the ROICC will conduct an inspection and surveillance conference with the inspection contractor to review construction requirements and discuss administrative procedures including: general base orientation, applicable base regulations; base fire, security, and emergency medical procedures; description of the EFD/OICC and ROICC organizations; relationship of the Government to contractor personnel; and other relevant administrative information. The A-E should be represented by personnel responsible for supervising the inspection services and, if possible, by the A-E inspection representatives.

1.7 **Inspection Orientation.** The inspection contractor shall provide an orientation to assure that all new personnel performing inspection services under the contract are able to execute their duties in a competent and effective manner, with minimum time lost in learning their new duties. The orientation shall be provided during the new personnel's first month of employment under this contract and shall include, but not be limited to, instruction in properly completing the forms to be used by inspection personnel; a review of administrative procedures to be used in meeting the requirements of this contract; an explanation of the authorities and responsibilities of the inspection personnel and other personnel in the inspection organization as they relate to this contract; a review of general requirements levied on construction contractors, such as safety requirements, environmental protection requirements, quality control requirements, and labor standards requirements and any necessary training in the actual technical procedures to be used in construction inspection.

1.8 **Government Furnished Materials.** The Government will furnish the following to the inspection contractor for use only in connection with this contract:

One full size set of reproducible (sepias) and [ ] copies of full size [and ____ copies of half size construction drawings] for each construction contract being inspected.

[5] [ ] copies of the construction specifications.

Samples of forms required to be submitted under this contract.

****

NOTE: List those materials to be furnished to the inspection contractor including construction plans and specifications, and Government forms and documents. Also state if, and under what conditions, the Government will make utilities available to the inspection contractor.

If a separate construction representative's office/trailer is being provided under the construction contract for use by the inspection contractor it should be listed above.

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1.9 Contractor Furnished Materials.

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NOTE: List those facilities, vehicles, and utilities support which the inspection contractor is expected to provide for himself and his employees. In no case will the Government owned office space, equipment, vehicles or support services be provided to the contractor without the specific approval of a Level 1 Contracting Officer. The use of an inspector's trailer provided under the construction contract does not require approval.

****

1.9.1 Office Space and Equipment. The inspection contractor shall furnish all necessary facilities, equipment and materials necessary to perform his contract. This includes office space, all necessary office furniture and equipment, all office consumables, all equipment and devices necessary to perform any testing, inspection or surveillance required, all necessary photographic equipment, all necessary safety equipment for inspection personnel, such as safety shoes and hard hats, any necessary mobile radio equipment, and any equipment which may be required to monitor adequately the compliance of the construction contractor with applicable safety regulations.

1.9.2 Vehicles: The inspection contractor shall provide all vehicles required for performance of the contract. These vehicles shall be registered with the Base Security Office in accordance with station requirements. Inspection contractor vehicles shall be clearly marked on each side of the vehicle with the name of the firm.

1.9.3 Specifications, Standards, and Publications. The inspection contractor shall be responsible for obtaining specifications, standards, and publications referenced in construction contract specifications.

2. SPECIAL CLAUSES

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NOTE: The following clauses shall be inserted in all inspection services contracts.

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2-1. Insurance.

(a) The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance:

Type of Insurance	Coverage Per Person	Per Occurrence	Property
Comprehensive General Liability	-	$500,000	-
Automobile Liability	$200,000	$500,000	$20,000
Workmen's Compensation	As required by Federal and State law.		
Employer's Liability	$100,000, except in states where worker's compensation may not be written by private carriers.		
Other Insurance	As required by State law.		

(b) Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or written statement of the above-required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Government in such insurance shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in on event less than (30) days after written notice thereof to the Contracting Officer. In addition, the comprehensive general and automobile policies shall contain a provision worded as follows:

"The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy."

(c) The Contractor agrees to insert the substance of this clause, including this paragraph (c), in all subcontracts hereunder.

2.2 **Conduct of Inspection Personnel.** All inspection contractor employees and subcontractor personnel are prohibited from engaging in any action which might result in or reasonably be expected to create the appearance of:

(a) Soliciting or accepting financial or other consideration directly or indirectly from construction contractors performing work for the Naval Facilities Engineering Command.

(b) Giving preferential treatment to any person affiliated with construction contractors or suppliers engaged in performing or seeking to perform contracts with the Naval Facilities Engineering Command.

2.3 **Restrictions on Inspection Contractor.** The inspection contractor and its affiliates will not be permitted to compete for construction contracts covered by this inspection contract or being performed at the same time and within the same area covered by the inspection services.

****

NOTE: The following clauses should be incorporated in the scope of work if applicable.

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2.4 **Option to extend the term of the contract.**

(a) This contract is renewable in whole or in part, at the option of the Government, by the Contracting Officer giving written notice of renewal to the contractor within the period specified in the schedule; provided that the Contracting Officer shall have given preliminary notice of the Government's intention to renew at least sixty (60) days before this contract is to expire. (Such a preliminary notice will not be deemed to commit the Government to renewal.) If the Government exercises this option for renewal, the contract, as renewed, shall be deemed to include this option provision. However, the total duration of this contract, including the exercise of any options under this clause, shall not exceed five (5) years.

(b) At the time it exercises its option rights, the Government shall specify the extended contract term which shall be for a period not less than one month nor more than 12 months.

(c) The contract prices applicable to any option term are subject to negotiation. If the parties are unable to reach agreement as to the prices applicable to a contract option term, the contractor shall perform during the option term at the prices established by the Government with the contractor retaining its right to seek additional compensation under the contract's "Disputes" provisions.

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NOTE: The following clause should be used if the scope of work contains estimated quantities for additional services.

****

2.5 **Variations in Estimated Quantities.**

(a) Where the quantity of a pay item in this contract is an estimated or indefinite quantity, it is anticipated that the total quantity of such pay item actually incurred may vary from the quantity identified in the scope of work. Where such variation from the estimated quantity occurs during the initial contract term or option period, an equitable adjustment in contract price shall be made.

(b) In computing the amount of this adjustment, the unit price for each item agreed upon by the parties for payment purposes in the Fee Schedule for Inspection Services shall be used where actual quantities are within twenty percent (20%) above or below the estimated quantity stated in this contract. No adjustment in unit price will be made unless the actual quantity varies more than 20% above or below the estimated quantity stated. Where the actual quantity incurred does vary more than 20% above or below the total stated, the unit price and subsequent adjustment to the contract price will be determined by mutual agreement of the parties.

3. **SCHEDULE OF CONSTRUCTION INSPECTION SERVICES.** For each construction contract for which the inspection contractor is to perform services, he shall perform the specific services listed below:

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NOTE: The writer is cautioned to carefully review the following descriptions before incorporating them into a scope of work. Submittal times and detail requirements should be modified to suit the needs of a particular situation. Notes and references to other parts of this manual are provided to assist in developing a scope.

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3.1 Escort Prospective Bidders. Escort prospective construction contract bidders on site visits prior to bid opening. Maintain log sheets showing names of prospective bidders, number of people escorted, dates and times visitors were escorted, and other similar information. The purpose of the site visits is to permit prospective bidders to see the construction site. No information regarding the construction contract itself shall be given to the prospective bidders and the bidders shall be referred to the ROICC to obtain answers to any inquiries they may have regarding the contract. [The inspection contractor shall be prepared to assist prospective bidders in obtaining camera passes from the base security office, should the prospective bidder desire to photograph the site.] [The inspection contractor shall be knowledgeable with respect to procedures to be followed by prospective bidders to obtain personnel identification badges and vehicles passes.]

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NOTE: All site visits should be arranged through the ROICC. The construction contract Invitation for Bid (IFB) should list the name and telephone number of the ROICC or the Government's point of contact for the construction contractor to call to arrange for site visits.

****

3.2 Coordinate Requests from Construction Contractor. Coordinate requests from the construction contractor for [outage permits,] [excavation permits,] [burn permits,] [haul routes,] and other similar items. This will require liaison with the ROICC and appropriate base personnel (Security, Public Works, Fire Department, etc.). The inspection contractor shall track status of the various requests and any unacted on after [five] [ ] calendar days shall be investigated and a report made to the ROICC. This service shall be provided continuously as required during the construction period for each construction contract inspected.

3.3 Attend Meetings and Conferences. This includes attending, taking notes, providing information to the ROICC or his representative at the following meetings, conferences, and briefings:

a. **Preconstruction Conference.** The inspection contractor shall attend the preconstruction conference for each construction contract inspected. The location, date and time of the conference will be provided by the ROICC by letter normally about two weeks prior to the conference. The purpose of the conference is to present to the construction contractor the administrative information necessary for execution of the construction contract, as well as to present a forum in which those personnel involved in the execution, inspection, and administration of the construction contract may meet one another, discuss relationships under the contract, and offer and receive clarifications on points related to contract administration. The inspection contractor shall assure attendance of those personnel who will perform on-site inspection of the construction contract. These personnel will be introduced and their functions explained to the construction contractor. Procedures for review of the various submittals and payment requests of the construction contractor, including the function of the inspection contractor in the review of these submittals will be explained. Written minutes of the conference will be provided to the inspection contractor, as well as to the construction contractor. The inspection contractor shall keep the firm's notes on the proceedings of the conference insofar as they affect the firm's responsibilities under this contract.

b. **Safety Meetings.** The inspection contractor shall attend safety meetings called by the ROICC with the construction contractor. The inspection contractor shall be prepared to discuss at these meetings any safety infractions committed by the construction contractor, with information as to specific paragraphs of the Corps of Engineers Safety Manual violated by the construction contractor, and to offer advice to the ROICC on safety matters related to the construction contract. The frequency of these meetings is dependent on the risk exposure of the job and the performance of the construction contractor. The inspection contractor shall plan on there being one safety meeting per month for each construction contract inspected.

c. **CQC Meetings.** Participate with the Government in CQC meetings with the construction contractor. The inspection contractor shall plan on one CQC meeting [per month] [every two weeks] per contract with CQC provisions. The execution of the CQC plan by the construction contractor will be discussed at these meetings. The inspection contractor will be called on to provide perceptions of the construction contractor's CQC performance.

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NOTE: Delete paragraph c. when CQC provisions are not included in the construction contract(s) being inspected.

****

d. **Other Conferences and Meetings.** Attend other conferences called by the Government with the construction contractor to discuss scheduling, potential claims, specific areas of work or problems during the progress of the construction contract. The inspection contractor shall assure the attendance at these conferences of those personnel directly involved in the area being discussed (specific problem or item) to offer to the Government information and advice on the subject being discussed as the inspector for the Government.

e. **Provide Construction Briefings and Reports.** The inspection contractor shall conduct construction progress briefings once [every two weeks] [every month] for the Government at a location on the base. At that time, the inspection contractor shall brief Government personnel on the status of construction as determined by the inspection performed by the inspection contractor. In addition to general progress on each construction contract, significant events, problems, starts, or completions shall be briefed. The inspection contractor shall provide at this meeting three copies of a typewritten Construction Progress Report detailing the highlights of the briefing. The report shall be as designated by the Government and may be in any logical format but will list the title and number of each construction contract; percent complete, both actual and scheduled, and a brief narrative of progress made during the period reported on as well as significant highlights.

3.4 **Review of Submittals.** This includes reviewing and providing written comments and recommendations to the ROICC on the following:

a. **Schedule of Prices.** The Schedule of Prices is submitted by the construction contractor on form NAVFAC 4330/4 in accordance with clause entitled "Schedule of Prices" of the General Paragraphs of the construction contract and shows quantities for the various types of work, the unit prices, and the total prices therefore. The Schedule of Prices shall be reviewed by the inspection contractor for sufficiency and logic of breakdown, appropriateness of units of measure, reasonableness of quantities and prices, and arithmetic accuracy. The inspection contractor shall also check for "front-end loading" of the prices by the construction contractor, proper balance between labor and material costs, use of "lump sum" amounts where units and unit prices are possible, presence of amounts not allowed under the Payments clause of the contract, and for proper allocation of "non-measurable" items, such as overhead and profit, to all the measurable work activities. The inspection contractor shall provide in any appropriate format, written review comments within [ ] [5] working days of receiving the Schedule of Prices. The comments shall point out perceived problems or discrepancies in the Schedule of Prices and shall recommend appropriate corrections or changes.

b. **Progress Schedules and Network Diagrams.** Progress charts and schedules are required of construction contractors under FAR clause 52.236-15 entitled "Schedules for Construction Contracts" of the Contract Clauses and Division One of the construction contract and normally are submitted in the form of bar charts. Occasionally, by his own choice or because of a specific contract requirement, the construction contractor submits a detailed Critical Path Method (CPM) Network Analysis schedule.

(1) **Bar Charts.** When the construction contractor submits a bar chart schedule it shall be checked by the inspection contractor to assure that price breakdowns and division of work used by the construction contractor correspond to those used in his Schedule of Prices, that the price breakdowns and divisions of work are logical, that arithmetic is correct, that detail is sufficient, that phasing is logical, that the schedule shows completion within time specified in the construction contract, and that the construction progress curve is correctly computed and drawn.

(2) **Network Diagrams.** In those instances where a CPM Network Analysis is submitted by the construction contractor, the same type of review shall be performed by the inspection contractor as on the bar chart schedule. Additionally, the inspection contractor shall review the network for logic of dependencies, for logic of the critical path determined by the construction contractor, and logic of durations, activity start and finish times and costs assigned to individual activities.

(3) **Submittal Requirements.** When bar charts are submitted by the construction contractor, the inspection contractor shall submit his comments within [ ] [10] working days of receiving the schedule. When CPM Network schedules are submitted by the construction contractor, the inspection contractor shall submit his written comments within [ ] [15] working days of receiving the schedule. The inspector contractor shall submit his written comments in any appropriate format which presents the schedule, the problem with the schedule, and the recommendation for improving the schedule.

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NOTE: Those contracts for which CPM Network Analyses are required from the construction contractor should be listed in the scope of work.

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c. **Contractor Quality Control (CQC) Plans** . The inspection contractor shall review CQC plans submitted by the construction contractor for compliance with terms of the construction contract and for completeness. The requirements for the construction contractor's Quality Control Plan are specified in the clause entitled "Contractor Quality Control" of the General Paragraphs of the construction contract. Provide written review comments in any format which presents problem items or concerns, together with recommendations for improvements. Written comments shall be submitted within 10 working days of receipt of the CQC plan.

d. **Contractor's Safety Plan.** The inspection contractor shall review the safety plan submitted to the ROICC by the construction contractor. The plan shall be reviewed for compliance with the terms of the construction contract and comments provided to the ROICC in the form of a draft letter from the ROICC to the construction contractor outlining problems and providing recommendations to bring the plan into conformance.

e. **Shop Drawings.** The term "shop drawings" includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data; and similar materials furnished by the construction contractor to explain in detail specific portions of the work required by the contract. [The ROICC will designate up to [ ] percent for non-CQC contracts, or up to [ ] percent for CQC contracts, of the total number of submittal items for review by the inspection contractor. Specific submittal items to be reviewed by the inspection contractor will be designated

by the ROICC on the approved version of the construction contractor's submittal log] -or- [The inspection contractor will review all submittals made by the construction contractor.] Submittal items each shall be reviewed to assure conformance with the construction contract requirements as follows:

(1) Qualifying notes by the construction contractor, CQC Representative, subcontractors or suppliers shall be called to the Government representatives attention with an opinion expressed as to whether the qualifying note represents a variance from the contract requirements.

(2) Submittal items requiring construction contractor CQC Representative approval under the CQC program must clearly and unequivocally indicate that the required approval has been made and that the required certification and authorized signature appears on the submittal.

(3) Submittal items approved by the CQC Representative/Government are to be given a cursory review in sufficient detail to ascertain that the proposed item(s) complies with the construction contract.

(4) Submittal items shall be reviewed to assure that the item proposed by the contractor for use is clearly identified (particularly important when the shop drawing is a catalog cut showing a number of different items).

Compliance or non-compliance with the construction contract requirements shall be stated in writing to the Government. Comments on the aforementioned points of review, recommendations, and notes shall be submitted to the ROICC in the format of a draft letter/form from the ROICC to the construction contractor addressing problems with the submittal and specific recommendations to bring any submittal into conformance. Forward comments and the shop drawing submittal back to the ROICC within 10 working days after receipt of the shop drawing from the ROICC.

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NOTE: When the Inspection Contractor is not the Designer of Record the above paragraphs shall be carefully edited to avoid duplication of effort in shop drawing review.

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f. Operation and Maintenance Manuals. The inspection contractor shall review the operation and maintenance manuals submitted to the ROICC by the construction contractor. The manuals shall be reviewed for compliance with the terms of the construction contract and comments provided to the ROICC in the form of a draft letter from the ROICC to the construction contractor outlining specific problems and providing specific recommendations to bring the manuals into conformance.

3.5 Inspect construction - Contractor Inspection System (CIS) projects. The inspection contractor shall perform inspection using as guides those documents listed in this scope of work under the paragraph entitled

"Applicable Documents". While the inspection contractor is not required to have inspection personnel on construction contract during the entire work day, the inspection contractor shall assure that, when necessary, each construction site is periodically visited by inspection personnel of appropriate expertise while the construction contractor is working. Furthermore, inspection personnel of appropriate expertise shall be used to inspect construction work sufficiently to assure that the work is in compliance with the construction contract documents. It is the responsibility of the inspection contractor to assure that items of construction are inspected before they are covered up by subsequent construction. If the construction contractor has submitted a CPM Network Analysis schedule to the Government for his contract, then the inspection contractor shall note on the A-E Inspection Report (AEIR) the start and completion dates of each network activity as occurring. The "i-j" numbers for the activity shall be listed as well as start date and completion date. The inspection contractor shall not hinder or impede the construction contractor in any way during the process of performing inspection services. The inspection contractor shall complete the AEIR for each construction contract detailing the results of inspection as set forth below. When construction work is not in compliance with the construction contract documents, the inspection contractor shall initiate the preparation of the Contract Construction Compliance Notice for signature by the appropriate Government representative.

3.6 **Monitor construction work of CQC projects for compliance with contract documents.** The services provided by the inspection contractor shall be similar to those specified in subparagraph on CIS projects above, except that on CQC projects quality control is a primary responsibility of the construction contractor. The inspection contractor shall assure that the quality control performed by the construction contractor is adequate to assure that construction is in compliance with contract documents. The inspection contractor shall perform checks of the construction to assure adequacy of the construction contractor's quality control. When necessary to assure contract compliance, the inspection contractor shall visit the construction site when the construction contractor is working. If the construction contractor has submitted a CPM Network schedule to the Government, then the inspection contractor shall note on the AEIR the start and completion dates of each network activity as occurring. The "i-j" numbers for each activity shall be listed as well as the start and completion dates. In addition to performing checks of the construction contractor's quality control, the inspection contractor shall monitor the construction contractor's execution of the CQC plan to assure adequate performance under the requirements of the construction contract. This process of inspection and monitoring the construction, and execution of the CQC plan on CQC contracts is referred to as "inspection/surveillance." Problems, deficiencies, or inadequacies with the construction contractor's construction, quality control, or execution of the CQC plan shall be noted by the inspection contractor on the A-E Inspection Report (AEIR) as set forth below. Recommendations for correction of problems, deficiencies, and inadequacies shall be included in the AEIR. Items of non-compliance which are not corrected by the construction contractor shall be the subject of a Contract Construction Compliance Notice as set forth below.

3.7 **Report instances of non-compliance with safety requirements.** The inspection contractor is not responsible for the monitoring or enforcement of safety requirements. However, if the inspection contractor observes an instance of non-compliance, he shall immediately report the non-compliance to the appropriate Government representative and the construction contractor. In addition, the inspection contractor shall draft, for the signature of the appropriate Government representative, a Contract Contractor Construction Compliance Notice for any items of non-compliance. For any operation which poses imminent danger to life or danger of serious disabling injury, that operation shall be halted immediately by the inspection contractor. **This is the only instance in which the inspection contractor has any authority or responsibility to issue direction to the construction contractor.** If any operation is so halted, the designated Government representative shall be notified immediately by the inspection contractor and the circumstances shall be noted on the AEIR and the Contract Construction Compliance Notice.

3.8 **Monitor compliance with environmental protection requirements.** Monitor the compliance of the construction contractor with the environmental protection requirements of his contract. Note non-compliance on the AEIR. Serious or imminent danger to the environment or endangered species shall be brought to the immediate attention of the appropriate Government representative by telephone.

3.9 **Monitor measurements, assurance surveying.** Monitor, by witnessing, the measurements and assurance surveying performed by the construction contractor. All problems and discrepancies shall be noted on the AEIR.

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NOTE: If the scope includes monitoring of construction contractor prepared record drawings, the inspection contractor shall use those observations to review and verify the record drawings are being maintained and finally delivered by the construction contractor.

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3.10 **Monitor materials testing.** Monitor all materials testing conducted by the construction contractor and his testing laboratories. Review testing procedures and reports as received from the contractor. Note problems and discrepancies on the AEIR. Witness and record results of tests which require Government witnessing. For all other tests, which do not specifically require Government witness by terms of the construction contract, perform spot checking. Spot check by witnessing and recording results of some of those tests for each construction contract. Recommend to the Government acceptance or rejection of all testing.

3.11 **Witness testing of waste, gas, water, electrical, heating, ventilation, air conditioning, fire protection, and energy monitoring control systems.** Note results on the AEIR.

3.12 **Review CQC Daily Reports and Construction Contractor Daily Reports to Inspector (DRI).** Review these forms for completeness and accuracy. Note problems and discrepancies on AEIR when produced or otherwise in the appropriate location on the CQC or DRI report. Continued problems or discrepancies which cannot be resolved shall be specifically pointed out in a timely manner, in writing, to the ROICC.

3.13 **Monitor the up-dating of Submittal Status Logs.** Monitor by reviewing at the job-site office, the construction contractor's updating of the Submittal Status log. Note discrepancies or problems on the AEIR or otherwise in the appropriate location on the CQC or DRI report.

3.14 **Prepare A-E Inspection Reports (AEIRs).** Prepare AEIRs for each construction contract inspected. The primary document to be provided by the inspection contractor is the A-E Inspection Report (AEIR). In general, the report will include comments relating to the status of contract efforts, the quality of these efforts as judged by the inspector, and any conversations, discussions, or other communications with the construction contractor. The A-E inspector's AEIR will also include a review of the construction contractor's CQC or DRI report. CQC and DRI reports also provide space for the A-E inspector's remarks and/or Exceptions. Remarks and/or Exceptions should be entered on all the construction contractor's CQC or DRI reports. If the inspector does not visit a particular construction project on a given day, an AEIR should not be completed for that contract that day. In such cases, the A-E inspector should use the aforementioned space for Remarks and/or Exceptions on the CQC or DRI report. These reports are key documents and their adequacy as far as documentation of the work undertaken by the construction contractor cannot be over emphasized. They must be complete in all regards with adequate reference to everything going on that may impact the progress or quality of the work. In cases where the CQC reports or DRI's are reviewed and the A-E inspector has a difference of opinion, such shall be noted in the AEIR report and under the Remarks and/or Exceptions space to inform the designated government representative for the contract. Also on CQC or DRI reports, the A-E inspector will review all test results for compliance with the construction contractor's CQC plan and the plans and specifications.

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NOTE: Preparation instructions for the AEIR are found in Appendix B.

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3.15 Notify ROICC of Possible Labor Standards Violations. **Bring to the immediate attention of the ROICC any instances where it is suspected that the construction contractor is in violation of the Labor Standards Provisions of the contract.**

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NOTE: The Department of Labor has determined that the conducting of Labor Standards interviews is a function reserved for the Government and may not be contracted out. All Labor Standards interviews must be conducted by in-house personnel.

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3.16 **Review and Comment on Contractor's Requests for Payment.** Complete, together with the construction contractor's representative, the monthly field pay estimate work sheet for each construction contract. The purpose of the monthly field pay estimate is to compute the value of work for which the construction contractor should be paid. Forward immediately to the appropriate ROICC the mutually agreed upon pay estimate. Review construction contractor's monthly invoice together with monthly updates of contractor's progress schedule for logic, accuracy, and appropriateness. Check it against the mutually agreed upon field pay estimate work sheet. Make written notations to the ROICC on monthly progress payments. The inspection contractor shall provide comments within one working day of receipt of construction contractor's invoice. The inspection contractor may be required to inspect material stored off-site for which the construction contractor requests payment. The inspection contractor will not be required to travel a distance in excess of [100] [200] miles [from the base] [from the ROICC's office] [from his office] in meeting this requirement. Individual tasking for this requirement will be by separate contract modification if required.

3.17 **Notify ROICC of Disagreements or Discrepancies.** Bring to the attention of the designated government representative, in writing, any disagreements with the construction contractor relative to contract requirements and/or discrepancies found in the plans and specifications as well as recommended solutions.

3.18 **Notify ROICC of Major Problems.** Notify the designated Government representative by telephone of any major project problems requiring immediate resolution. Provide written documentation in letter format as a follow up to the telephonic notification. In the letter, cite the appropriate construction contract title and number, and reference time and date of telephone conversation. If appropriate, a photograph (8"X10" glossy color) shall be attached to the written follow-up. The written follow-up shall reference the photograph and shall contain an explanation of what the photograph shows.

3.19 **Prepare Contract Construction Compliance Notices (CCCN).** In cases where the inspection contractor sees that workmanship and/or material are not in compliance with the construction contract documents or ongoing work is liable to result in an unsatisfactory construction, a Contract Construction Compliance Notice should be prepared for the designated signatures. An "instant print" photograph shall be taken of any physical construction deficiency by the inspection contractor and attached to the compliance notice. The construction contractor's job superintendent, or, in the case of CQC jobs, the CQC Representative shall be consulted by the inspection contractor so that there is mutual agreement that the photograph fairly shows the deficiency in question. Upon completion of the Contract Construction Compliance Notice, the inspector is to provide same to the designated contractor representative and expediously provide same to the appropriate government representative. The A-E inspector should maintain the status of all outstanding compliance notices and provide status reports as necessary using the AEIR's. A periodic status of all non-compliance notices should be provided by the inspector as part of reviewing the contractor's request for payment to preclude paying for work which does not meet requirements.

NOTE: Preparation instructions for Compliance Notices are found in Appendix B.

3.20 **Assist conducting pre-final inspections.** For each construction contract for which the inspection contractor has inspection responsibility, accompany the Government representative conducting the pre-final inspection. From information gathered at that inspection, prepare a detailed punch list of all items which do not comply with the construction contract or items which have not been completed. The list shall be specific, shall cite the specification paragraph number or construction drawing number which applies, and shall provide a detailed narrative description of the discrepancy. The list shall reference the construction contract number and title and the date of the inspection. The list shall be typewritten and submitted by letter to the ROICC within two (2) days after the final inspection.

Prior to recommending to the ROICC that final construction contractor payment be made, the inspection contractor shall verify that all discrepancies are corrected and inform the ROICC in writing stating that all discrepancies noted at the pre-final inspection and any subsequent inspections have been corrected. The letter shall cite the construction contract number and title and the date(s) of the inspection(s).

3.21 **Provide advice for change order negotiations.** For those contracts for which the inspection contractor has inspection responsibility, when requested by the Government, provide advice to the Government personnel preparing for change order negotiations. Verify and inform the Government as to current status, crew sizes, trades and productivity on similar work, actual conditions, areas impacted and potential delays. Follow up oral advice with a written synopsis of advice given.

NOTE: Under estimating services covered in paragraph 4. the inspection contractor may also be required to prepare cost estimates for change orders and to provide written assessments of the expected impacts of change orders on the overall job.

3.22 **Provide Evaluation of Construction Contractor and Design Architect/Engineer.** At the completion of each construction contract for which the inspection contractor had inspection responsibilities, the appropriate ROICC will provide to the inspection contractor a partially completed Performance Evaluation-Construction Contract Report, SF 1420. The inspection contractor shall complete blocks 9, 10 and 11 and return the completed form to the ROICC. The inspection contractor shall attach to the SF 1420 a narrative backup sheet providing a brief justification of the evaluations checked in blocks 9 and 10. Particularly noteworthy areas, either good or bad, should be highlighted. Specifics must be provided to support an unsatisfactory evaluation or an outstanding evaluation (though no block is provided on the form for an outstanding evaluation). This back up sheet shall be typed and shall have the following title entered as a heading on the sheet:

"Addendum to SF Form 1420

Construction Contract NO._____

Title_____"

Also at the completion of each construction contract for which the inspection contractor had inspection responsibilities, the appropriate ROICC will provide to the inspection contractor a partially completed Performance Evaluation Architect-Engineer Form, SF 1421. The inspection contractor shall complete the block "Working Drawings", based on the opinion of the inspection contractor as to the accuracy and completeness of the construction contract plans and specifications, rate, by checking the appropriate code, the working drawings of the A-E as "Excellent", "Average", or "Poor". In the block "Remarks" the inspection contractor shall provide in narrative format comments regarding the suitability and quality of the plans and specifications. Comments should be based on the first hand observations of the inspection contractor. Significant errors and omissions or, conversely, plans and specifications of unusually high quality shall be specifically commented upon. The report shall be typed and signed.

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NOTE: When the A-E contractor providing inspection is the Design A-E, do not have them prepare the A/E evaluation.

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3.23 **Maintain Working Files.** Maintain working files by construction contract of all reports, correspondence, etc, generated as result of this contract. These files shall be available to the ROICC personnel at any time. Any correspondence, documents, reports, samples, photographs or material collected by the inspection contractor during performance under this contract shall become the property of the Government, and may not be released to anyone outside the ROICC organization without specific written authorization of the Government. Any and all requests for access to any such files or materials by any person, agencies, or organizations will be forwarded to the Government for determination. At the completion of each construction contract, all files and materials related to that contract shall be transmitted by the inspection contractor to the ROICC. The transmittal shall be accompanied by a letter listing the material transmitted. The material will be organized in some logical format approved by the ROICC.

3.24 **Provide Information and Advice on Construction Contractor Claims.** Construction contractors periodically file claims for additional costs and time on construction contracts. On such occasions, the inspection contractor shall prepare and submit to the ROICC a written report which includes in narrative form all information the inspection contractor has relative to the claim (actual conditions, areas impacted, delays incurred, photographic support, etc). The information, recommendations, and advice provided by the inspection contractor will be used by the Government to resolve the claim situation with the construction contractor.

4. CONSTRUCTION COST ESTIMATING SERVICES.

4.1 **General Requirements for Estimates.** Whenever tasked by the Government, the inspection contractor shall prepare an independent construction cost estimate for change orders to construction contracts. Under the lump sum price portion of this contract, the inspection contractor shall prepare all cost estimates for which the ROICC's initial estimate indicates that the aggregate total of additive work and deductive work will be less than [$25,000] [ ]. Estimates for changes having an aggregate total larger than that included under the lump sum portion of this contract shall be individually ordered and paid for in accordance with the unit prices established for the work. The estimates shall be prepared in the format specified by the ROICC and shall be prepared in sufficient detail to allow item-by-item comparison with the construction contractor's proposal. Access to or disclosure of information concerning the cost estimate shall be closely held and shall be limited to personnel whose duties require knowledge of the estimate. Under no circumstances shall any cost data used to develop the estimate be discussed with any personnel of any construction contractor. Estimates shall be labeled "For Official Use Only" and shall be delivered to the ROICC in a sealed envelope.

4.2 **Narrative Assessment.** The inspection contractor shall prepare, for each change order cost estimate, a narrative assessment of the impact of the proposed change on the construction contractor's operations. The narrative assessment shall be typed on 8 1/2" X 11" paper and shall be stapled to the cost estimate. The heading of the assessment shall include the construction contract number and title and the (proposed change) number for which the assessment is being prepared. The assessment shall address the probable impact of the change on time to complete the job, extra resources which must be marshalled by the construction contractor, the availability of those resources, impact on current and planned operations, and any technical or supervisory expertise which may be required by the construction contractor to perform the needed work. If the construction contractor has submitted a CPM Network schedule, the impact assessment shall address, by "i-j" number and description, which specific activities in the network will be affected by the change and the impact on the critical path. The A-E contract shall also provide an opinion as to the latest date the government can issue a Notice to Proceed (NTP) to the construction contractor without incurring delays.

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NOTE: The scope of work should describe the level of detail required in the construction estimate and the format to be used. The scope should require the use of standard overhead and profit rates on change orders not requiring an audit or involving extended/unabsorbed overhead. For change orders requiring an audit or extended/unabsorbed overhead, the profit and overhead to be used shall be determined by the Government.

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4.3 **Analysis of Estimates Prepared by Others.** When tasked by the Government, the inspection contractor shall prepare and submit to the ROICC an independent analysis of the engineering change order estimate prepared by others. The purpose of the analysis is to determine completeness of the estimate and to determine if the assumptions made in the preparation of the estimate reflect actual field conditions and operations. The inspection contractor shall review the estimate for overall completeness and validity of assumptions regarding existing conditions and construction contractor's method of accomplishing the change. The inspection contractor shall provide the designated Government Representative with a written evaluation of the results of the analysis along with any recommended revisions to the change order estimate.

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NOTE: The above requirements for estimate analysis would not apply to estimates prepared by the inspection contractor because these estimates should be prepared based upon actual construction progress and field conditions.

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5. CONSTRUCTION PHOTOGRAPHIC SERVICES.

5.1 **General.** The inspection contractor shall take and provide to the Government complete progress, record, and other construction photographs, taken by a competent photographer, as indicated below:

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NOTE: Photographic services required to document major problems such as claims, safety violations, strikes, or other significant occurrences are included in the scope and price for the basic inspection services.

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a. **Progress Photographs.** The inspection contractor shall submit monthly progress photographs and slides for each construction contract designated for construction photography. Progress photographs shall show three views of each construction project and shall be taken monthly from consistent vantage points. The vantage points shall be selected so that a true sequence of photographs may be made and the progress of construction may be compared throughout the entire construction period from contract award until Government acceptance of the facility (Beneficial Occupancy). Each set of progress photographs shall consist of three 35mm slides and four 8" by 10" glossy color prints for each of the three views of the construction. The first set of progress photographs for each contract shall show the construction site before the construction contractor mobilizes on the site.

b. **Completion Photographs.** Completion photographs and slides shall be submitted by the inspection contractor on each construction contract actually completed when all construction work is complete and after all temporary structures have been removed and the debris cleared away. These photographs

should be taken, whenever possible, from the same vantage points used to take the progress photographs. Whenever landscaping, paving systems, or minor refinements are added later, additional photographs should be taken to show the structure or project to its best advantage. The inspection contractor shall provide four 8" X 10" glossy color prints, and three 35mm color slides for each of the three views of the completed facility as completion photographs.

c. **Special Construction Operations Photographs.** In addition to the progress and completion photographs described above, the inspection contractor shall provide two 8" X 10" glossy color prints and two 35mm slides of significant construction operations (large concrete pours, placement of major equipment; i.e., generators, boilers, cranes) and problem areas for those contracts requiring construction photography. These photographs are to be taken either at the specific direction of the ROICC or as the inspection personnel of the inspection contractor note situations requiring photography. The inspection contractor's inspection personnel should be alert for situations requiring photography and make arrangements to get the photographer out on the job to cover special construction operations.

d. **Other Photographs.** The ROICC may, from time to time, require the inspection contractor to provide other photographs required to document significant construct on operations on contracts other than those designated as requiring construction photography. The format, subject and nature of views to be provided, will be described in a photographic service request issued to the inspection contractor. The inspection contractor may expect to be requested to provide the following type of photographs under this category: 8" X 10" glossy black and white prints; 5" X 7" glossy black and white prints; 35mm color slides; color "instant prints" (Polaroid or similar); and 8" X 10" glossy color prints. Payment for these additional photographs will be in accordance with the contract schedule of prices for these services.

5.2 **Photographs Property of Government.** All photographs and slides produced by the inspection contractor under this contract, whether or not submitted against one of the requirements above, shall become property of the Government and shall be submitted to the ROICC.

5.3 **Negatives.** All negatives produced by the inspection contractor under the requirements of this contract, whether or not prints are produced from them, shall become the property of the Government. The contractor shall maintain a file of all negatives produced, and upon completion of the construction for each contract, shall provide to the Government the complete file of all negatives for each construction contract. The negatives shall be turned over to the Government in plastic negative file sheets marked with the contract title and number. Each negative shall be numbered in some logical numbering system which is used to key photographic prints to the appropriate negatives. In taking photographs, the inspection contractor shall employ some device (such as a "data back" on the camera) to record date of the photographic shot on the film.

5.4 Photograph Marking. Each print shall be provided with identifying data on the reverse side as follows:

a. Security classification _____

b. Photograph and negative number: _____

c. Name and location of activity: _____

d. Purpose of photograph: (progress photo, construction deficiency, strike, etc.)

e. Date and time of exposure: _____

f. Orientation of exposure: _____

g. Title of construction project: _____

h. Identifying number of building or structure: _____

i. Detailed title: _____

j. Construction Contract number: _____

k. Identification of Construction Contractor: _____

l. Identification of photographer: _____

m. Identification of Inspection Contractor: _____

5.5 Camera Passes. Control of photography is governed by regulations of the base Commanding Officer. Possession and use of cameras by the inspection contractor aboard the base are subject to those regulations and the inspection contractor is responsible for complying with those regulations. Each camera used by the inspection contractor must be issued a camera pass which must be kept with the camera. The photographers employed by the inspection contractor must also be issued a camera pass. It shall be the responsibility of the inspection contractor to obtain the necessary passes from the base Security office.

6. SURVEYING SERVICES.

6.1 General. The inspection contractor shall provide topographic and civil surveys for construction contracts. The inspection contractor shall be given specific tasks as the need arises.

6.2 Requirements. The specific types of work anticipated to be normally required include the following:

6.2.1 **Topographic Surveys** will normally be for verification of construction contract quantities or controls. The work will include establishment of semi-permanent horizontal and vertical control monuments (minimum of two required) outside the anticipated limits of construction, if required by the task's written scope. Semi-permanent horizontal and vertical control monuments shall include, but not be limited to, the use of 2" X 2" wooden hubs or steel rods and pins. Assumed bases for the control shall be used only where specifically stated in the work authorization. Surveys shall be of third order accuracy. Topographic surveys for determination of quantities by cross sections, grid elevations, contour tracing, or other methods may be anticipated.

6.2.2 **Verification of Construction layout or stakeout surveys** may be for the support of miscellaneous projects constructed by others. Such surveys include, but are not limited to, the following:

a. Verification of building layout.

b. Verification of grade stakes for drainage culverts, ditches and utility lines.

c. Verification of existing grade stakes for roads, parking areas, ball fields, antenna fields and poles, and power lines.

d. Verification of horizontal and/or vertical curves for roads, rail lines, power lines, pipelines, etc. All work shall be third order.

Controls for Construction Layout and Stakeout survey work will be designated on the task's written scope and may include the designer's or construction contractor's benchmarks or base lines.

6.4 **Initiation of Tasks**. Each task will be initiated by a written scope of work from the ROICC. The scope of work will list the survey requirements and format of the survey report or plot. The survey work shall commence within [two] [ ] working days of the receipt of the tasking Scope of Work by the Inspection Contractor. Copies of survey notes are to be furnished to the ROICC within [two] [ ] working days from the date of the survey. Final survey calculations and plots are due within [ten] [ ] working days from the completion date of the survey.

6.5 **Reports**. Only one written (final) report will generally be required for each task. Interim reports in the form of raw data or copies of field notes may be required for purposes of format review, progress review or advance information. Drawings shall be submitted in the original, on standard size sheets, provided by the ROICC. Lettering shall be of such size as to be legible when reduced to half size.

a. **Topographic Surveys**. The Report/Plots shall be presented on an OICC standard size sheet, penciled on tracing paper, utilizing scales and contour intervals as stated in the tasking Scope of Work. When plan/profile

and/or cross section plotting is required, the grid lines on the original sheets shall be reproducible orange or green. A sketch number shall be obtained from the ROICC and placed on each sheet and this, together with the firm name, responsible principal's signature, contract number, task number, title, and date of submission shall be placed on the sheet. Computations, work sheets or "hard copy" plots shall be submitted. Field books shall also be submitted when specifically required; otherwise, they may be retained by the Contractor until termination of the contract at which time they shall be submitted.

b. Construction Layout and Stakeout Surveys. Report/Plots shall consist of copies of all field notes, calculations, sketches, etc., and a written narrative of the description of the work (brief but sufficient to describe items not covered in the survey notes). Include Construction Contract number and title, date of survey, party members, etc. Plot survey as required by the tasking Scope of Work.

6.6 Payment The inspection contractor shall complete the Schedule of Prices [(attached as Appendix ____ to this scope of work)] as it pertains to this Section. The Schedule of Prices shows the estimated quantity of each of these items which will be required during the period of the contract. Payment will be based upon full completion of items, subject to receipt of invoices. Partial completion of surveys, will not be a basis of payment. Overall quantity of each item and payment is subject to the Variation in Estimated Quantities clause of the Special Provisions.

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NOTE: Assure that the estimated quantity of each required item is included in the schedule of prices.

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6.6.1 Topographic Surveys: Measurement for Payment for Topographic Surveys will be based upon the number of measured units of completed work. A measured unit will consist of a one acre plot with an elevation grid layout at 50 feet centers. A maximum of 20 point elevations shall also be determined. The control for the topographic survey shall be within 2,500 feet of the survey location. Topographic survey shall be plotted at the scale given in the tasking Scope of Work. Contours shall be plotted on two foot intervals with one foot interpretation. Major features within the survey shall also be plotted.

6.6.2 Construction Layout or Stakeout Survey: Measurement for Payment for Construction Layout or Stakeout Survey will be based upon the number of measured units of completed work. A measured unit will consist of establishing or verifying elevations and locations (within the projects construction limits) of 10 points per unit. All measurements shall be determined within the tolerances given in the construction contract written specifications or to the third order if not indicated otherwise.

7. RECORD DRAWING SERVICES.

7.1 General Requirements. The inspection contractor shall monitor construction contractor field maintenance of "as-built" drawings and shall prepare [interim] [final] [interim and final] record drawings [for the contracts inspected] [for the contracts listed in Appendix ___] [for the following construction contracts:

_____

_____

_____]

7.2 Definitions.

a. Red-line Drawings. Red-line drawings are full size, working blueline copies of construction plans marked in red by the construction contractor as construction progresses to show additions, deletions, and changes to the construction plans; previously unknown or unshown underground utilities; or other corrections to field conditions indicated on the drawings.

b. As-built Drawings. As-built drawings are the final red-line drawings. They show the final as-built condition of the facility constructed and are provided by the construction contractor to the Government.

c. Interim Record Drawings. Interim record drawings are full size reproducible (sepia) drawings reflecting as-built conditions. They provide an interim set of reproducibles until such time as the final record drawings are prepared, normally many months after the completion of the construction contract.

d. Final Record Drawings. Final record drawings are the original construction contract drawings, corrected in a permanent way to show the actual condition of the finally completed facility.

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NOTE. There are a number of items specified here, all of which are generally not required, particularly not on a single contract or on a number of small contracts. Pick the requirement for all items judiciously and modify your own specification accordingly.

****

7.3 Monitor As-built Preparation. The inspection contractor shall review preparation of as-built drawings by the construction contractor and shall monitor the construction contractor's posting of changes to the as-built drawings as they occur. The inspection contractor is responsible for assuring the accuracy of the as-built drawings prepared by the construction contractor and is required to notify the ROICC if the as-built drawings maintained by the construction contractor are inaccurate or are not being updated.

7.4 Prepare Interim Record Drawings. In order to provide the Government with a set of reproducible drawings immediately upon completion of construction, the inspection contractor shall prepare interim record drawings for those contracts indicated. Interim record drawings shall be prepared on a full-size set of reproducible sepias of the construction contract drawings. Changes shall be posted in pencil incrementally as they occur. Changes posted shall be those marked by the construction contractor on his red-lines, as well as those observed by the inspection contractor. The inspection contractor is responsible for the accuracy of the interim record drawings he produces. The inspection contractor shall deliver the completed interim record drawings to the ROICC within 5 working days of the receipt of the construction contractor's as-built drawings from the Government.

7.5 Verify As-built Drawings . At the completion of each construction contract for which this service is provided, the inspection contractor shall field check the as-built conditions indicated on as-built drawings provided by the construction contractor. The inspection contractor shall indicate by note and signature that each sheet of the as-built drawings has been checked and is accurate. The inspection contractor shall use not only the as-built drawings maintained by the construction contractor but also observations during inspection to verify changes made from original contract plans.

****

NOTE. Select either preparation of interim record drawings or verification of as-builts on any specific construction contract. On contracts that the inspection contractor prepares interim record drawings he is required to verify as-built conditions as they are posted so a separate as-built verification is not necessary.

****

7.6 Prepare Final Record Drawings. The inspection contractor shall use [the verified as-built drawings] [a copy of his interim record drawings] to revise the original contract drawings and provide final record drawings. The Government will provide the inspection contractor with the original contract drawings and with the construction contractor prepared as-built drawings. The inspection contractor shall furnish all other materials and equipment necessary to prepare the final record drawings. Each sheet of the final record drawings shall be plainly marked by a stamp of lettering adjacent to the title block in the following manner:

RECORD DRAWING
DATE _____

Additionally, in the appropriate section of the title block, the inspection contractor shall indicate the date the drawing was revised and by whom. Within 30 working days from receipt of the construction contractor's as-built drawings, the inspection contractor shall deliver to the ROICC the completed original final record drawings and one full size set of sepias for each construction contract indicated.

8. SPOT CHECKS AND CONSTRUCTIBILITY REVIEWS.

****

NOTE. The following services would not be used when the design A-E is used as the inspection contractor.

****

8.1 General. The inspection contractor shall perform spot checks for completeness and accuracy of the construction plans and specifications and constructibility reviews of the proposed facility [for the contracts inspected] [for the contracts listed in Appendix ___] [for the following construction contracts:

_____

_____

_____]

8.2 Definitions.

a. Spot Check. A review of the construction plans and specifications to determine their completeness and accuracy. This check uses sampling techniques to provide an overview of the plans and specs, with perhaps one or two specification sections being checked in detail. The check shall be formal and disciplined in approach, with the use of a prepared check list to lead the checker through a set of predetermined procedures to ascertain completeness and accuracy of the plans and specifications.

b. Full Scale Completeness and Accuracy Check. A complete, full scale review of the construction plans and specifications to ascertain their completeness and accuracy. Usually tasked when the spot check reveals significant errors or omissions. Uses the same type of prepared check list used for the spot check, but the entire set of plans and specifications is checked, rather than just a section or two.

c. Constructibility Review. A review of the construction plans and specifications to determine the constructibility of the facility. Such items as the types of materials used, the known or potential interferences to construction, site considerations, etc. are reviewed to determine whether the facility is readily constructible as designed.

8.3 Purpose of the Reviews. The ultimate purpose in performing these reviews is threefold:

a. To perform a quality check for the Government to determine the completeness of the product delivered by the design Architect/Engineer.

b. To eliminate change orders to construction contracts which are caused by conflicts, ambiguities, inaccuracies, and deficiencies in and between the construction plans and specifications.

c. To eliminate construction contract requirements which are impossible or impracticable to build as well as to maximize the constructibility as a feasible and readily obtainable objective in the geographic region where the construction is to be performed, recognizing the suitability of materials, availability and capability of the labor forces, and standards of practice of the construction industry in the region.

8.4 **Requirements.**

8.4.1 **Check List.** The Government will provide to the inspection contractor a copy of P-446 "Constructibility Reviews" as a reference for reviewing plans and specifications. The inspection contractor will develop its own check list to use for checking construction plans and specifications, and add any procedures thought beneficial. The check list developed by the inspection contractor shall take into account the type of construction envisioned by the plans and specifications to be checked, as well as the inspection contractor's own inherent organization.

8.4.2 **Spot Check for Completeness and Accuracy.** The inspection contractor shall perform a spot check to determine the completeness and accuracy of the construction plans and specifications. In spot checking, the inspection contractor shall choose a representative segment or segments of the facility which professional opinion indicates is critical to the entire facility. The plans and specifications for the work included in these segments shall be reviewed for completeness and accuracy. This shall include a spot check of the various disciplines (architectural, structural, mechanical and electrical) to identify conflicts, ambiguities, errors and omissions.

The specifications shall be spot checked to insure that major work items are identified and that there is no apparent conflict with the work or indicated on the plans. The purpose of the spot check is to provide the Government with an overall professional opinion as to whether or not the plans and specifications are sufficiently complete and accurate to use as construction contract documents. The inspection contractor shall also provide a written opinion as to the completeness and accuracy of the plans and specifications and whether or not performance of a complete review check is warranted.

If the spot check reveals substantial error, omission, inaccuracy or conflicts, the government may separately task the inspection contractor to perform a full scale completeness and accuracy check or it may return the documents to the design A/E for a complete review and correction of all deficiencies. When the corrected documents are returned by the designer of record, the Government may desire to have the inspection contractor perform another spot check of a different representative segment. In the event that additional spot checks are required, the additional work will be added to the contract at the applicable unit price established for such reviews by means of a change order.

8.4.3 **Full Scale Completeness and Accuracy Checks.** When separately tasked by the government, the inspection contractor shall perform a full scale completeness and accuracy check of the plans and specifications.

8.4.4 **Constructibility Review.** The inspection contractor shall review the design plans and specifications to determine the constructibility of the facility as detailed in the drawings and specifications. In performing this review, consideration shall be given, but not limited to the following:

a. Accurate depictions of site conditions such as access, utilities, general configuration and conformance with the approved master plan.

b. Adaption of designed structures and features to site conditions and constraints.

c. Adequacy of working and storage space and access to the site for all contractors and Government operations as well as provisions for coordination to preclude on-site operational conflicts during construction.

d. Assurance that contract requirements include provisions for environmental protection safeguards with respect to dust control, erosion, salvage and disposal of wastes.

e. Appropriateness of contract duration; consideration of the need for a CPM Network Analysis System and relationship to other work planned or underway.

f. Requirements for Contractor Quality Control/Inspection System, adequate submittal requirements and clear responsibility for all submittal approvals and testing.

g. Clearly defined procedures for scheduling outages and the feasibility of utility interruptions.

h. Requirements for government furnished materials and equipment, service/utility connections, equipment phasing and long lead requirements.

i. Availability of materials and labor skills and review of special materials and structural systems available in the area.

j. Assurance that the work can be constructed using methods, materials and equipment common to the construction industry.

k. Provisions for safe and efficient operation of installed equipment.

l. Requirements for operating and maintenance documentation and training.

8.4.5 **Reports.** The following reports shall be prepared and submitted:

a. **Spot Check Review Comments.** The inspection contractor shall prepare and submit to the ROICC the review comments listing the findings of the spot check for completeness and accuracy within [5] [ ] working days after receipt of the documents for review.

b. Full Scale Review Comments. When separately tasked to perform a full scale completeness and accuracy check, the inspection contractor shall prepare and submit to the ROICC the review comments listing the findings of the full scale check within [15] [ ] working days after receipt of the documents for review.

c. Constructibility Review Comments. The inspection contractor shall, subsequent to the constructibility review, prepare recommendations to the ROICC in narrative letter format outlining constructibility problems within [15]' [ ] working days after receipt of the documents for review.

****

NOTE: If it is desired to have the comments submitted in a particular format or on any particular form, the requirements should be included in the above paragraphs.

****

8.4.6 Payment. Payment for each of the spot checks and constructibility reviews performed shall be made upon satisfactory completion of the reviews and government acceptance of the reports.

****

NOTE: Usually, not all of the aforementioned services would be required in any one instance, unless the inspection services contract were in support of a particularly large construction effort. The fact that a desired service does not appear in the listing presented below does not preclude the ability of the ROICC or EFD from including that service in an inspection services contract, however any such service ought to be a logical extension of the types of services normally provided by an architectural or engineering firm.

****

ADD APPROPRIATE APPENDICES OR ANNEXES SUCH AS INFORMATION ON THE CONSTRUCTION PROJECTS, INSPECTION CONTRACT SCHEDULE OF PRICES, ETC. IF REQUIRED.

APPENDIX B

PREPARATION INSTRUCTIONS FOR

FORMS AND REPORTS

ASSOCIATED WITH INSPECTION CONTRACTS

The preparation instructions include suggested distribution and due dates. Prior to incorporating these instructions into a particular scope of work, carefully review the requirements and modify the instructions to fit the specific needs of the EFD/OICC.

B.1

A-E INSPECTION REPORT (AEIR)

A. DESCRIPTION/PURPOSE

To maintain a daily record of construction progress and of events which may impact on progress. On Contractor Quality Control (CQC) Contracts, used additionally to record comments on the adequacy of the construction contractor's CQC system and of the construction contractor's CQC daily report. This report is a key document and its correct and complete preparation is essential. The AEIR should use the same format as the Construction Representatives Report (CRR), NAVFAC 11013/10 except that the report title and designation should be replaced with the title "A-E Inspection Report" and the name and address of the firm providing the inspection services.

B. PREPARATION INSTRUCTIONS

Item numbers coincide with the numbers shown on the sample. Also shown are examples of correctly and incorrectly completed AEIRs. The report shall be complete in ink using legible handwriting or hand lettering. The reports shall not be typed.

1. Date. Use Navy dating system, e.g., 6 Oct 1983

2. Report No. Reports must be numbered in sequence, starting with Report No. 1 the day after award of contract. The first few reports until the contractor commences work on site, also Sundays and holidays, will most probably show "no activity." On days when the inspection contractor does not perform any inspection services the report shall indicate "no inspection services rendered". Reports covering consecutive days during which there was no construction activity or no inspection were performed may be included on a single form. In such cases the report number shall list the first and last days covered by the report (for example:"Report No. 123 - 127" would cover days 123 through 127.)

3. Contract No. Enter number of construction contract being reported on, e.g., N624745-83-C-0100.

4. Short Title. Enter descriptive title of construction contract being reported on, e.g., "Administration Building."

5. Place. Enter station name.

6. Contractor. Enter name of construction contractor, e.g., "Smith & Jones General Contractors."

7. Superintendent. Enter name of construction contractor's job site superintendent.

8. CQC Representative. Enter name of construction contractor's CQC representative.

9. Job Site Surveillance and/or Inspection.

a. Items Observed/Inspected. List items and portions of construction observed in a given construction contract. Note items such as inspection of work-in-place, submittals, certifications, tests observed, materials and equipment checked for compliance. List here also, by "i-j" number and activity title, any network activities started or completed by the construction contract on that day. Also key problems to "i-j" numbers.

b. Comments on Results of Surveillance/Inspection. List results of inspection of items listed in 9a.

10. List Off-Site Contractor Inspection and Testing Observed. As in item 9 above, list off-site inspection of contractor/subcontractor operations, e.g., prefabrication operations, borrow-pit operations.

11. Comments on CQC Daily Report. Review CQC Daily Report (required of construction contracts where CQC is a mandatory requirement) and Daily Report to Inspector (required on all construction contracts) for accuracy and completeness. Resolve any differences with the construction contractors CQC Representative or Superintendent immediately. List only areas of disagreement which cannot be resolved along with explanative comments.

12. Job Safety. Note uncorrected safety hazards. List lost time accidents and attach accident report. Note and attach copy of "Safety Related Contract Construction Compliance Notices" given to construction contractor.

13. Instructions Given CQC Representative/Superintendent. Note instructions given. Assure that any verbal instructions are followed up in writing. Note that the inspection contractor has no authority to direct the construction contractor. "Instructions" in the sense used here connotes explanatory or informative comments.

14. Deficiencies Noted. Enter Construction Contract Compliance Notice number(s) only and attach copy of Compliance Notice, NAVFAC 4330/36 signed by the appropriate Government personnel. In general, the Contractor's CQC organization should be given the opportunity to detect and correct deficiencies. Any deficiency which is not corrected on the day of discovery but is carried over must be reported by the contractor's CQC Representative. Uncorrected deficiencies must be reported on by the inspection contractor until corrected.

15. Remarks. In diary form, note items of particular interest. On job delays, note equipment and/or other parts of the work affected thereby. Indicate precisely the effect of weather on delays, whether all or part of the work is delayed by weather; if only a part, what part and how. Similarly for changes, note date the Notice to Proceed (NTP) was issued for the change, the equipment in use or on standby when the NTP was received by the construction contractor, when the construction contractor started work on the change, the expected date of changed work completion, the actual date of completion and

any obvious significant impact in the construction contractor's work as a result of the change. Note also where labor force to perform work directed by change order came from (another operation on the job or new on job). All work stoppages, labor problems, possible claims, disputes, conflicts, etc. should be noted here. Indicate exact extent of stoppage or dispute and effect on job. On last line in remarks section, note weather conditions during day particularly as they may impact on construction progress, e.g. "Sunny and clear, no impact on construction," or "Heavy rains (4" last 24 hours) and high winds, shut down all grading operations and roofing operations." Where CPM networks are used "i-j" numbers shall be keyed to remarks as appropriate. Key remarks to any photographs used to document problems or progress.

16. Signature. Signature of person making report should be entered.

C. **FREQUENCY**

AEIR's shall account for each day of the construction contract. See instructions under paragraph B.2 above.

D. **DUE DATE**

If no violations or deficiencies are noted submit AEIR by 9 a.m. on the following business day.

If violations or deficiencies are noted submit AEIR by close of business on the same day of the report.

E. **DISTRIBUTION**

Original copy to the ROICC.

One copy to be retained in inspection contractor's file.

One copy to the A-E firm's office.

A-E INSPECTION REPORT

INSTRUCTIONS

Review CQC report and daily report to inspector; verify by spot checking work in place or progress, equipment, and material delivered to site; observe testing procedures; review CQC Records.

1. DATE	
2. REPORT NO.	

3. CONTRACT NO.	4. SHORT TITLE	5. PLACE
6. CONTRACTOR	7. SUPERINTENDENT	8. CQC REPRESENTATIVE

9. JOB SITE SURVEILLANCE AND/OR INSPECTION
(List work, material, equipment, testing observed)

ITEMS OBSERVED/INSPECTED	COMMENTS ON RESULTS OF SURVEILLANCE/INSPECTION

10. LIST OFF-SITE CONTRACTOR INSPECTION AND TESTING OBSERVED

11. COMMENT ON CQC DAILY REPORT *(List areas of disagreements that cannot be resolved)*

(Over)

A13199

12. JOB SAFETY *(Uncorrected hazards—lost time accidents)*

13. INSTRUCTIONS GIVEN QQC REPRESENTATIVE/SUPERINTENDENT *(Follow up in writing)*

14. DEFICIENCIES NOTED *(Attach Contract Construction Compliance Notice, NAVFAC 4330/36)*

15. REMARKS *(Visitors, delays, problem areas, job progress, fires, field changes, change orders, adherence to CQC plan, CQC Records)*

16. SIGNATURE OF [illegible] REPRESENTATIVE

B.2

CONTRACT CONSTRUCTION COMPLIANCE NOTICE (CCCN) NAVFAC 4330/36

A. DESCRIPTION/PURPOSE

This form is used to notify construction contractors of deficiencies and to record corrective action taken. It is drafted by A-E inspection personnel, signed by the appropriate Government representative and delivered to the appropriate representative of the construction contractor who signs in block 10, acknowledging receipt of it.

B. PREPARATION INSTRUCTIONS

Form completion:

Item numbers coincide with numbers shown on sample.

1. Contractor. Enter construction contractor's company name.

2. Contract Number, Project, and Activity. Enter the number of the construction contract, the title of the contract, and for "Activity" enter "the name of the Activity or Station as appropriate."

3. Notice Number. Number notices sequentially by construction contract.

4. Date. Enter date of notice using Navy dating system; e.g., 17 Aug 1984

5. Spec Paragraph and/or Drawing Number. Enter appropriate reference to construction contract documents.

6. Reference. Enter applicable reference, if any, to shop drawings, certifications, CQC Reports.

7. Deficiency in Workmanship and/or Material. Enter brief narrative description of item not in compliance. Be specific.

8. Corrective Action. Completed by construction contractor indicating corrective action to correct deficiency noted.

9A. Construction Representative. Signed by inspector representative of the inspection contractor.

9B. ROICC/ROICC Representative. Signed by the Designated Government Representative for the particular construction contract.

10. Contractor's Acknowledgement. Signed by the construction contractor's CQC Representative if a CQC contract or the construction contractor's project superintendent, if the contract is not a CQC contract.

C. **GENERAL INSTRUCTIONS.**

When the A-E Inspector notes a construction deficiency, the form should be completed listing only one deficiency on each notice. The inspector completes blocks 1 thru 7 then signs and dates the notice. The A-E inspector then obtains the signature of the appropriate Government representative. After the Government representative signs the form, the inspector presents it to the construction superintendent or in the case of a CQC job, to the CQC representative. The appropriate construction contractor representative should acknowledge receipt of the notice by signing in block 10.

b. After the form is signed by the construction contractor's representative, that person is given the original white and one white copy. When the item has been corrected, the construction contractor's representative should return the original with the corrective actions noted to the A-E inspector. The form should be accepted by the A-E inspector only after being satisfied that the item is properly corrected.

c. If appropriate, the A-E inspector shall take an instant print photograph of the deficiency and attach a copy to the CCCN.

D. **FREQUENCY**

As required.

E. **DUE DATE**

Due with the daily A-E Inspection Report for the day the deficiency was noted.

F. **DISTRIBUTION**

The pink and yellow copies are attached to the AEIR and turned into the ROICC. The ROICC will mail the pink copy to the construction contractor's home office. The yellow copy is filed by the ROICC in a suspense file for the appropriate contract. When the white original is received from the contractor indicating that corrective action has been taken, the suspense copy is pulled and destroyed and the original filed with the appropriate AEIR.

The inspection contractor retains the blue copy with his files. It is used to follow up correction. At the close of each contract all uncorrected deficiencies still remaining shall be transferred by the inspection contractor to the final inspection punch list.

CONTRACT CONSTRUCTION COMPLIANCE NOTICE

This is prepared on CARBONLESS paper. Tear off a complete set BEFORE filling in. See additional instructions on reverse side.

1. CONTRACTOR	3. NOTICE NUMBER
2. CONTRACT NUMBER, PROJECT, AND ACTIVITY	4. DATE
5. SPEC. PARAGRAPH AND/OR DRAWING NUMBER	6. REFERENCE (Shop Drawing, Certification, QC Report Number)
7. DEFICIENCY IN WORKMANSHIP AND/OR MATERIAL	8. CORRECTIVE ACTION ACCEPTABLE DATE

This Notice does NOT authorize any work not included in the contract and shall not constitute a basis for additional payment or time.

If you are in disagreement with this Notice, contact the Resident Officer in Charge of Construction immediately.

9A. CONSTRUCTION REPRESENTATIVE

DATE NOTED	SIGNATURE AND TITLE

9B. ROICC/OICC REPRESENTATIVE

DATE ISSUED	SIGNATURE AND TITLE

10. CONTRACTOR'S ACKNOWLEDGMENT

DATE RECEIVED	SIGNATURE AND TITLE

INSTRUCTIONS

General

This form is applicable to construction contracts accomplished under the cognizance of the Commander, Naval Facilities Engineering Command.

Distribution of completed form

Superintendent or CQC Representative (White) (Original and first copy)
Contractor's home office (Pink)
ROICC designated representative (Blue)
ROICC Office (Yellow)

Item No. 3, Notice Number

Number consecutively for each job with only ONE DEFICIENCY noted.

Item No. 10

For completion by contractor as appropriate. If this is a CQC job, indicate corrective action on daily CQC report.

B.3

CONSTRUCTIBILITY REVIEW COMMENTS

A. DESCRIPTION/PURPOSE

To describe, in narrative form, problems which are evident from a constructibility standpoint as a result of the constructibility review performed by the inspection contractor.

B. PREPARATION INSTRUCTIONS

Review comments shall be prepared in a narrative letter format. The letter shall be typewritten in 8 1/2" x 11" paper and shall detail specific problems surfaced by the inspection contractor during his constructibility review. The letter shall cite the construction contract number and title and shall key comments and recommendations to drawing numbers or specification paragraph numbers.

C. FREQUENCY

Once for each construction contract requiring it.

D. DUE DATE

As set forth in the Scope of Work

E. DISTRIBUTION

To the ROICC

B.4

REVIEW COMMENTS

A. DESCRIPTION/PURPOSE

To record review comments for review of construction contract drawings and specifications. This form is used to document comments generated by the inspection contractor as a result of both the spot check for completeness and accuracy as well as the full scale check, when required.

B. PREPARATION INSTRUCTIONS

Items coincide with blocks shown on the sample.

Date. Enter date form is prepared.

Project Title and Location. Enter title and location of construction contract, e.g., "Construct Medical Training Facility NAS Anywhere."

JO#. Enter number of construction contract, e.g., N624745-83-C-0100.

Comments By. Enter name of inspection contractor's firm and telephone number.

Section. Indicate section of drawing (i.e. Architectural, Structural, etc.) or specification section (i.e. 2200 Earthwork). Do not enter comments on more than one section per sheet.

Type of Review will always be "Final."

Drawing No. or Paragraph No. Enter appropriate plan drawing number or specification paragraph number.

Item No. List review comment items sequentially from one through the last comment within the section being commented on.

Comments. Enter the comment in brief narrative form. On the last Review Comments Sheet enter overall comments. In the case of spot check review, the inspection contractor shall enter a statement of opinion as to whether problems found are sufficient to warrant a full scale completeness and accuracy check.

Sheet. After assembling all the comment sheets, number each sheet sequentially, one through the total sheet number.

Of. Enter total number of sheets.

C. FREQUENCY

One set of comment sheets is prepared for each construction contract reviewed.

D. DUE DATE

As set forth in the Scope of Work

E. DISTRIBUTION

One set of comments (together with marked construction plans in the case of full scale reviews) to the ROICC.

best copy available

DESIGN COORDINATION AND REVIEW - COMMENTS

JOB ORDER NO.

COMMENTS BY	CODE	PHONE	DATE

PROJECT TITLE AND LOCATION

	TYPE OF REVIEW
	30%
	100%
	FINAL
	OTHER

SECTION

DWG. NO. OR PAR. NO.	ITEM NO.	COMMENTS *(Make general comments after specific comments)*	REVIEW ACTION *(& reasons where significant)*

SHEET OF SHEETS

B.5

SCHEDULE OF PRICES REVIEW

A. DESCRIPTION/PURPOSE

To provide to the ROICC the inspection contractor's comments and recommendations on the Schedule of Prices submitted by construction contractors.

B. PREPARATION INSTRUCTIONS

For each construction contract for which the inspection contractor has inspection responsibility he shall review the Schedule of Prices submitted by the construction contractor at the beginning of each contract. The review shall be performed in accordance with the instructions contained in the scope of work . Upon completion of the review the inspection contractor shall prepare a typewritten report in the format of a draft letter to the construction contractor addressing problems with the Schedule of Prices and recommending of appropriate corrections or changes. The letter shall reference the construction contract number and title for which the Schedule of Prices was submitted.

C. FREQUENCY

Once, for each construction contract for which the inspection contractor has inspection responsibilities.

D. DUE DATE

Within 5 working days of receipt of the Schedule of Prices and the Government Estimate from the ROICC.

E. DISTRIBUTION

Original plus 2 copies of the report and the forwarding letter to the appropriate ROICC.

B.6

PROGRESS SCHEDULE REVIEW

A. DESCRIPTION/PURPOSE

To provide to the ROICC the inspection contractor's comments and recommendations on the progress schedules submitted by construction contractors.

B. PREPARATION INSTRUCTIONS

For each construction contract for which the inspection contractor has inspection responsibility, he shall review the progress schedules submitted to the ROICC by the construction contractor. The review shall be performed in accordance with the instructions contained in the scope of work. Upon completion of the review, the inspection contractor shall provide comments in the format of a draft letter to the construction contractor which shall contain a statement of perceived problems or discrepancies in the schedule and shall contain recommendations of appropriate corrections or changes. The report shall be forwarded by letter to the appropriate ROICC. The letter shall reference the construction contract number and title for which the progress schedule was submitted.

C. FREQUENCY

Once, for each construction contract for which the inspection contractor has inspection responsibilities.

D. DUE DATE

Within [ ] [10] working days of receipt of a bar chart schedule and within [ ] [15] working days of receipt of a computerized network schedule from the ROICC.

E. DISTRIBUTION

Original plus 2 copies of the report and the forwarding letter to the ROICC.

B.7

CONSTRUCTION CONTRACTOR CQC PLAN REVIEW

A. DESCRIPTION/PURPOSE

To provide to the ROICC the inspection contractor's comments and recommendations on the Contractor's Quality Control (CQC) Plan submitted by construction contractors.

B. PREPARATION INSTRUCTIONS

For each construction contract for which the inspection contractor has inspection responsibility, and for which the construction contractor is required to submit a CQC plan, the inspection contractor shall review the CQC plan. The review shall be performed in accordance with the instructions contained in the scope of work. Upon completion of the review, the inspection contractor shall prepare a typewritten report in any suitable format on 8 1/2" X 11" paper. The report shall contain a statement of perceived problems or omissions in the CQC plan together with recommendations for appropriate changes or additions to the plan. The report shall be forwarded by letter to the appropriate ROICC. The letter shall reference the construction contract number and title for which the CQC Plan was submitted.

C. FREQUENCY

Once, for each construction contract for which the construction contractor has inspection responsibilities and for which a CQC Plan is required of the construction contractor.

D. DUE DATE

Within 10 working days of receipt of the CQC Plan from the ROICC.

E. DISTRIBUTION

Original plus 2 copies of the report and the forwarding letter to the ROICC.

B.8

SAFETY PLAN REVIEW

A. DESCRIPTION/PURPOSE

To provide to the ROICC the inspection contractor's comments and recommendations on the safety plan submitted by construction contractors.

B. PREPARATION INSTRUCTIONS

For each construction contract requiring a safety plan, the inspection contractor shall review the safety plan submitted to the ROICC by the construction contractor. The plan shall be reviewed for compliance with the terms of the construction contract and comments provided to the ROICC in the form of a draft letter to the construction contractor outlining problems and providing recommendations to bring the plan into conformance.

C. FREQUENCY

Once, for each construction contract.

D. DUE DATE

Within 10 working days of receipt of the construction contractor's safety plan from the ROICC.

E. DISTRIBUTION

Original plus 2 copies of the report and the forwarding letter to the ROICC.

B.9

CONTRACTOR CONSTRUCTION SAFETY VIOLATIONS

A. DESCRIPTION/PURPOSE

To notify construction contractors of safety violations on their jobs and to serve as a record of those violations.

B. PREPARATION INSTRUCTIONS

The inspection contractor drafts a Contract Construction Compliance Notice as outlined before and gives it to the ROICC. The ROICC signs the notice and presents it to the construction contractor.

CCCN's for safety violations shall include the following:

Description. Enter brief narrative description of each violation. Complete sentences are not necessary, but the nature of the violation should be readily apparent from the description entered.

Due Date. Enter date by which violation must be corrected by construction contractor. Common sense must be used in entering date. Many safety violations can easily be corrected within a day. Others, which may require ordering special equipment, may take longer. However, it may be that operations on a certain portion of the job can not be allowed to continue until proper protective equipment (such as guard rails on scaffolding) is obtained and installed. Any life threatening hazard must be corrected immediately. Temporary measures may be necessary immediately, until the acceptable correction is made.

Reference. Enter reference to appropriate requirement of the Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, April 1981 which is being violated. Reference will be to appropriate paragraph number (e.g. 22.M.06) of this manual.

C. FREQUENCY

As required

D. DUE DATE

Due with the daily AEIR for the day the violation was noted.

E. DISTRIBUTION

a. All copies initialled, but not signed, are attached to the AEIR and turned into the ROICC. The ROICC will present the original to the construction contractor's job site representative and mail a copy to the construction contractor's home office. A copy will be given back to the inspection contractor after the notice is signed by the ROICC.

b. The inspection contractor retains a copy with his files and uses to follow up correction.

B.10

SHOP DRAWING REVIEW COMMENTS

A. DESCRIPTION/PURPOSE

To detail comments and recommendations of the inspection contractor on construction contractor shop drawings and submittals provided to him by the Government for review.

B. PREPARATION INSTRUCTIONS

Must be typewritten in letter format and provided to the ROICC. Comments shall be keyed to construction contract number and title, and submittal or shop drawing number.

C. FREQUENCY

Must be submitted as necessary after performing submittal or shop drawing review.

D. DUE DATE

Within 10 working days after receipt by the inspection contractor, of the shop drawings or submittals.

E. DISTRIBUTION

Original plus two copies to the ROICC.

B.11

RECOMMENDATIONS ON CONSTRUCTION CONTRACTOR PROPOSED MATERIAL VARIANCES

A. DESCRIPTION/PURPOSE

To provide to the ROICC the inspection contractor's recommendations on material variances and substitutions which the construction contractor may request.

B. PREPARATION INSTRUCTIONS

Upon request by the ROICC, written recommendations shall be submitted on material substitutions or variances requested by the construction contractor. The recommendations of the inspection contractor should, based on the knowledge of the inspection contractor of the job and of construction practice, address such questions as "will the proposed material work?", "is it of better or equal quality?", "should it cost more or less?". The recommendations shall be typewritten and submitted by letter to the ROICC. The letter shall cite the construction contract number and title and shall reference the request of the ROICC.

C. FREQUENCY

As requested

D. DUE DATE

Within 10 working days of request.

E. DISTRIBUTION

Original plus 2 copies to the ROICC.

B.12

CONSTRUCTION CONTRACTOR'S FIELD PAY ESTIMATE REVIEW

A. DESCRIPTION/PURPOSE

To review the estimate of the construction contractor of the value of work complete. This is a preparatory step to submission of the construction contractor's invoice.

B. PREPARATION INSTRUCTIONS

The inspection contractor, together with the representative of construction contractor, reviews the estimated value of construction work completed to date. The Schedule of Prices, NAVFAC 4330/4; a field pay estimate work sheet; or a CPM cost run (Look-Ahead Report) is used as basis for computing total value of work complete. Both the inspection contractor and the construction contractor indicate agreement on their mutual estimate by placing their signature on the form used. The inspection contractor shall then forward, by letter, this pay estimate to the ROICC with a statement that he has validated the pay estimate, the date it was validated, and the amount estimated to be complete. The forwarding letter shall reference the construction contract number and title and the date of the estimate.

B. FREQUENCY

Monthly for each construction contract inspected.

C. DUE DATE

Within one working day of review of pay estimate with representative of construction contractor.

D. DISTRIBUTION

Completed pay estimate, together with forwarding letter, to the ROICC.

B.13

REVIEW OF CONSTRUCTION CONTRACTOR'S MONTHLY INVOICE

A. DESCRIPTION/PURPOSE

To review and check construction contractor's monthly invoice and update of schedule. Percentage of work complete and mathematical accuracy of invoice is checked.

B. PREPARATION INSTRUCTIONS

Upon receiving the construction contractor's monthly invoice from the Government, the inspection contractor reviews the percentage of work complete on the invoice and compares it to the most recent, mutually agreed upon pay estimate. The percentage complete, as stated on the invoice, may not exceed the percentage agreed to on the pay estimate. The inspection contractor then reviews the invoice for mathematical accuracy. The inspection contractor forwards the checked invoice to the ROICC by letter with recommendations concerning payment (a form letter may be developed and used by the inspection contractor for this purpose). The forwarding letter shall reference the construction contract number and title and the date and number of the invoice.

C. FREQUENCY

Monthly for each construction contract inspected by the inspection contractor.

D. DUE DATE

Letter forwarding construction contractor's monthly invoice, with inspection contractor's recommendations, must be received by ROICC within one working day of receipt of the invoice by the inspection contractor.

E. DISTRIBUTION

Letter forwarding invoice and inspection contractor's recommendations sent to ROICC.

INSPECTION & SURVEILLANCE SERVICE

This information is required to evaluate fee proposals and comply with Navy audit requirements on negotiated contracts.

Name of Firm		A-E Contract No.		
Project Title		Location		
Item	Est No. of Hours	Hourly Rate	Direct Cost	Total Direct Cost
A. Project Manager				
B. Construction Management Functions				
incl: Preconstruction conference				
Schedule of Work				
Schedule of Prices				
Quality Control Plan				
Safety Plan				
Environmental Plan				
Demolition Plan				
Partial Payments				
Review CQC Representative Reports				
Monthly Progress Reports to ROICC				
Prefinal/Final Inspections				
Others (Field Change Orders, etc)				
C. Field Inspection Functions				
D. Consultants				
Acceptance Tests - Mech				
Acceptance Tests - Elec				
Acceptance Tests - Civil				
Acceptance Tests - Others				
Equipment Specialists				
E. Typist				
SUB-TOTAL				
Overhead _____% x $_____				
Profit _____% x $_____				
State Tax _____% x $_____				
F. Vehicle Rental				
G. Travel and Per Diem				
GRAND TOTAL				

Prepared by _____ Date _____

A-E Monthly Progress Report	Progress Report No.
Construction Contract No.	PERIOD ENDING

NAME OF CONTRACT

CONTRACTOR

VALUE OF CONTRACT THROUGH CHANGE

MAJOR CONSTRUCTION ACCOMPLISHED *(this period)*

SCHEDULE PERCENT COMPLETE	ACTUAL PERCENT COMPLETE
AUTHORIZED COMPLETION DATE	ESTIMATED COMPLETION DATE *(Inspector's Est)*

PROBLEMS

DELAYS

SIGNED BY	REVIEWED BY